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"An Investigation into the Prehistoric Cup and Ring  
Engravings of the British Isles, with reference to  
Galicia."

An approach to the study of prehistoric rock engravings  
through archaeology, anthropological analogy, sociology,  
experiment, spatial analysis, and aspects of semiology.

Thesis submitted to the Council for National Academic Awards  
in partial fulfilment of the requirements for the Degree of  
Doctor of Philosophy.

Peter Jonathan Jackson.

School of Education, Middlesex Polytechnic.

May 1989

Collaborating establishment. The Department of Archaeology,  
University of Cambridge.

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## Abstract

### "An Investigation into the Prehistoric Cup and Ring Engravings of the British Isles, with reference to Galicia."

This thesis is concerned with the prehistoric Cup and Ring engravings which are found on the natural rock in the British Isles and Ireland, it also refers to the similar petroglyphs in Galicia. The aim is to investigate a number of avenues of approach to the art, some well trodden and others relatively unexplored.

A careful consideration is given to the concept of art, both in its use in Western society, and with reference to other simpler social groupings. The use of analogy is examined, since ethnological material is referred to and used later in the study.

The literature on the Cup and Ring engravings is analysed in some detail for the evaluation and extraction of ideas which may have been overlooked or have become more relevant today.

The dating of Rock Art tends to be elusive. Most relevant criteria which may relate to the forming of a chronology for the Cup and Rings has been examined, re-evaluated, and conclusions drawn.

Various approaches to recording and methodology are analysed in relation to the material being studied; questions of objectivity and preservation are raised.

In order to pursue the explanation of the Cup and Rings a little farther beyond the descriptive level; a structural approach is taken in this study. A spatial analysis of the symbols and their grouping or setting leads to the identification of triadic or diadic structures, these are then used to identify the basic principles underlying the cultural and social background.

Following from other anthropological studies a grammatical syntax is developed for the Cup and Rings; this is then used to suggest a way forward for the forming of a typology based on criteria which avoids the use of the subjective process of identifying shapes and symbols.

Various hypotheses suggest how the identified types might relate to subcultural groupings or chronological development.

Finally some further possible avenues of study which stem from the ideas in this thesis are suggested.

### Acknowledgements

I would first of all like to thank my tutor Professor John Coles for all his great help in the development of this thesis. His guidance and assistance has been freely given, far beyond that which one would have expected. The thesis would never have been completed without his confidence, encouragement, and guidance.

I am grateful for the stimulation I received from Dr Ian Hodder and his postgraduate students at Cambridge in the early days of my research, and wish to extend many thanks to them.

At Trent Park, Middlesex Polytechnic, I received great help over a number of years from John Morgan in the department of photography, and also from various members of the library staff, who used great energy to find me books and periodicals from afar. Professor Elizabeth Goodacre frequently offered me friendship and support.

Finally, but far from least, I thank my wife for carrying out proof-reading for me in the midst of a hectic life.

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## Introduction.

The material to be studied in the following thesis is generally described as 'Prehistoric Cup and Ring marks'. Focus will mainly be on those that are found in England, Scotland, and Ireland, with also some reference to Galicia in N.W. Spain.

The name Cup and Ring is a general term since most of the carvings have designs involving Cup marks, that is half spherical type holes into the rock and one or more concentric circles around them. As we shall see at times other shapes may be involved, and from the basic form or shape a quite rich variety of inventive designs appear.

The majority of the petroglyphs are found carved on natural boulders or outcrops of rock in coastal regions or moorland, although there are occasions when they are found on smaller portable rocks, or on slabs that have been used as cist covers or introduced into graves. These examples have now frequently found their home in museums, unless they are in private possession.

A dominant fact of distribution is that few examples have been found in the Southern half of England or Wales, even when rock for carving is present. Exceptions are the finding of portable stones with Cup and Ring carvings in some barrows in the South.

Numerous richly carved stones are found in Derbyshire, Yorkshire, and Northumberland in particular. In Scotland the especially rich areas are Argyll and Galloway. A number are also found throughout the Clyde valley, Southern and Central Scotland, the Tay valley and up to Inverness.

The Irish stones have never been well documented and new finds are constantly appearing, recently in the county of Meath. However the S.W. has been noted for many rich Cup and Ring sites, and scattered examples are found up the West coast, inland parts of Fermanagh, and on to North Donegal.

In Galicia N.W. Spain, sites of Cup and Rings carvings are especially rich and numerous. However as will be mentioned later the vocabulary of shapes is not as narrow as in the British Isles, and other forms are found mixed with the conventional Cup and Ring shapes; the deer is very common, but also weapons, footprints, idolforms, grids, horse and rider, and a number of abstract shapes (or at least non identifiable) appear frequently. These other forms sometimes blend in with the Cup and Rings; this is especially true of the deer, but they are also often found on separate rocks or sites. Specific references are made to the Galician engravings with the discussion of MacWhite's work under the chapter on the Literature, in the section ' More recent classics or major works.' Considerable reference is also made within the chapter on Chronology; and the Iberian engravings are also used illustratively at times in the chapter on Structural Analysis.

The Cup and Ring design is not exclusive to the above countries but is found distributed throughout much of the world. The important points to be noticed regarding the carvings in the British Isles, and these I feel should be emphasised, is the richness of production and that there are few instances of any other competing rock design. Examples of the few exceptions are the axe motives on cist slabs in Nether Largie 2 and Ri Cruin (Morris 1977, 109, 117), footprints on a slab from Pool Farm, Dorset, and daggers on a slab from Badbury, Dorset (Simpson and Thawley 1972, 96). Two handprints are found at Barrakill, and at Glen Domhain a clear deer print (Morris 1977, 60, 85). In the latter case as Morris states and I confirm, the engraving is relatively unweathered and thus it could be much more recent than the Cup and Rings. This is discussed under the chapter Survey of the Literature, 'Smaller articles'. In this section I also evaluate Feather's (1964) article claiming yet another deer form. However the fact remains that these and one or two other possibilities make the number of 'figurative' symbols very few.

Recently, interesting chalk carvings have come to light in the Dorchester area (Woodward 1988). These were found on the sides of a Neolithic circular enclosure ditch. There are four engravings the largest being approximately 50cm high and 30cm wide. Unlike the carved stones that have been found in barrows, these engravings can only be said to relate to the Cup and Ring symbols rather loosely. The largest consists of a number of concentric arcs some

superimposed, and one of which could have been a complete circle before a break away in the chalk. The smallest engraving is closest to the Cup and Ring forms, consisting of three concentric rings and a line entering them; adjacent to this form is a smaller single ring with two connecting lines. The other two engravings at the site cannot be said to relate to the Cup and Ring family. I will discuss later in the chapter on Chronology Cup and Rings that are found on the backs of Megalithic stones and in different contexts to those found on bare open natural rock. However equally important is the point that these engravings have been found at all, and it is quite possible that in time more could be found which will add to our knowledge of the existence of art forms and symbols outside the traditional provinces of Cup and Ring and other megalithic art.

On occasions Cup and Rings are found on solitary standing stones or within stone circles, I will deal with this later when discussing the work of Thom in the section 'More recent classics'. Cup marks alone are more common on Standing stones whether upright or fallen (Burl 76). Browne (1921) discusses the matter in his book, however he is often concerned with cup marks only, and as I discuss with the work of Romilly Allen under 'Earlier classics', I tend in this thesis to exclude rocks and sites with cup marks only. Nevertheless I will return to Browne's work in the Literature chapter.

Normally the carvings are found on almost horizontal outcrop surfaces, although there are exceptions. In Scotland only about one

in eight carved surfaces slope at an angle of over 20°, and in cases where a noticable slope is present there seems to be no predominance of a certain direction for the slope (Morris 1981, 172). The rock itself is frequently a softish sedimentary sandstone, but on occasions in Ireland and Galicia a harder stone such as granite has been carved.

Unfortunately few definite patterns of type distribution seem to have appeared, a point I try to look at more closely towards the end of the study.

Looking at the altitude of the Scottish sites, the average height is lowered considerably by the many low lying examples around Kilmartin, Argyll, and near Kirkcudbright. Otherwise the carvers seem to have preferred heights between 100-200m above the sea, often with a sea view, but invariably an open situation (Morris 1981, 173).

Another characteristic of the British Isles Cup and Ring carvings which should be mentioned here is the lack of many large and intensely carved sites; more common are the few carvings found on isolated rocks. The exceptions are Achnabreck, Routing Lynn, the Concho stone, and perhaps some of the Irish stones such as Boho or Magheranaul, all of which will be referred to again later in the text. As Morris (1981, 173) points out, in South Scotland few sites have more than ten carvings and over 50% have five carvings or less.

This could lead one to put forward the idea of centre and periphery. If one looks at the Kilmartin area although there is nothing to compare with Achnabreck in size, there are other medium size sites within two or four kilometres range of it, such as Cairnbaan, Kilmichael Glassary, or perhaps Ormaig. These could be seen as competing centres, and there are then many rocks outlying them with only a small number of symbols. I will return to this idea in the last chapter.

In Northumberland Roughing Lynn is outstanding in size and might be seen as central, at least in importance to the large sweep of smaller sites on the many moors, mainly to the south.

Looking at Galloway an extremely rich area for Cup and Rings, I would find it more difficult to define major sites. The situation is similar in Yorkshire. An area such as Ilkley has a number of middle size rocks of an individual character, but I would not find it easy to define a site that has central importance. All important I feel when looking at these areas of maximum concentration for the Cup and Ring petroglyphs is not to lose sight of the commonplace idea, that the high concentration may simply be due to the fact that these were good areas for settlement and survival, although of course this need not deny the exploration of the concept of centre and periphery within the Cup and Ring sites in these areas. Walker (1974) claims that the criteria for

settlement appears to dictate where the Cup and Rings will be found in the Pennine areas.

The dating of the carvings is one of the initial big problems. The only real definite dates are from examples on smaller slabs found face down in dateable cists, or buried in graves with dateable objects; these give us dates of about 1500-2000BC. However there is every indication that the stones could have been carved long before this use, thus we only have final dates. In addition other later associations indicate that the stones may have been in use long after these dates.

Thus, the data or material for this study are a fairly narrow group of what appear to be non-figurative symbols carved mainly on the natural rock surfaces in the open landscape in the British Isles, Ireland and Galicia over a long period of time, possible for 2000 years, and as long or longer than the use of the Christian cross.

This is no newly discovered phenomena but has been studied and written about for over 100 years resulting in the accumulation of a considerably large and valuable body of work. Due to the nature of the material much of this work is descriptive and has helped to amass an impressive corpus of rocks and sites, but other work tends to be more hypothetical and imaginary. Therefore there has been I feel little progress of an explanatory nature, and

frequently work on the engravings has been seen as peripheral to other studies and disciplines.

In order to help explain or account for the particular structure and approach I have taken in this thesis I feel that it may be helpful to briefly explain my own path to this area of study, and to give an insight into my approach to the data in the field.

My background disciplines of study have been first the Fine Arts both the history and practise as a painter, I then later studied Sociology with some Philosophy and Psychology. It was only with my interest in prehistoric petroglyphs after this, that I began to study some Archaeology, and was fortunate in being invited to attend postgraduate seminars in the Archaeology department at Cambridge for two years or so.

My interest and fascination with petroglyphs was aroused when I made a journey by canoe of approximately 200 miles with Indians on the Vaupes in Colombia (Jackson 1982). Petroglyphs appear mainly on the rocks at the edge of rivers and in the rapids. my knowledge of recording methods was minimal, and since I was virtually a 'hitchhiker' with the Indians my time for recording was limited. Usually there were only a few minutes when the canoe and our luggage was being manhandled or portaged around or through the rapids. and measurement and orientation was minimal or non-existent; position and site description was written up from memory



when travelling. I did manage to take quite a number of black and white photographs and colour slides, and my impressions at the time of this first encounter with petroglyphs were much more those of a painter- a fascination with the stylised and formalised figurative forms; and since I have been mainly a non-figurative painter myself, a delight in the abstract and non figurative symbols. After this journey the desire to know more about the background of the engravings led to library research and a published paper (Jackson 1982).

To further my new found interest I next made a visit for a month or two to Val Camonica in N. Italy and worked with the research teams on the rocks, learning the processes of recording that have been developed under Professor Anati. A year or so later I visited the Yagour Plateau and Oukaïmedan in Morocco; the richness of the large scale figurative images on the plateau as well as the non-figurative was overwhelming, but again there were severe limitations on my recording since I only reached these rather isolated areas by backpacking and carrying all food.

Two trips to the U. S. A. and Canada enlarged my interest through meeting other students at conferences, and from viewing a wide range of symbols in differing environments and on various rock faces. On these trips most of the sites were documented, and I did not intend further research, so I contented myself with photography. In California I did attempt some casting, once with disastrous results as I relate later in this text; and in British

Columbia I was encouraged by Beth Hill (1974) to carry out some cloth rubbings.

In between the above visits I made other trips to Europe. Especially important was the visit to Mt. Bego where the particular environment of valley and mountain, and also the repetition but infinite variation of some symbols such as the 'cornu', I found to be of great interest. There is I believe to some degree a parallel here in the repetition and variation of the Cup and Ring engravings.

Armed with my new interest in petroglyphs I revisited many of the Palaeolithic caves of N. Spain and France, this time to focus more on the many engravings that are usually adjacent to the far more publicised paintings; and I also became far more aware of the wealth and importance of the non-figurative symbols, which again seem frequently to have been subsumed beneath the more publicised figurative.

When I decided to embark upon a period of longer term study, I decided on the Cup and Ring engravings initially I think for two reasons. First their relative ease of access, although when I decided it was necessary at times to refer to Galicia the accessibility decreased, and I have made three field trips to that area. Secondly I have always been fascinated by the limited 'vocabulary' of the Cup and Ring symbols, yet at the same time the

extremely rich and infinitely varied assemblages, no two being exactly alike.

Fieldwork for this thesis in the British Isles, Ireland, and Galicia, has been easier than in most previous areas, since I have often had a vehicle with me to carry equipment and materials to a point near the site, and time has been more plentiful. Most sites that I have visited I have photographed in black and white which I have developed myself, and also in colour. This has often meant waiting for the light or wetting the rock face. Chalking has only been used in extreme situations. basic measurements and orientation have been taken. On occasions when the symbols or the assemblage has a particular interest, due to unusual combinations, spacing or scale, I have taken a tracing, or at times a rubbing if the surface is receptive. These procedures have both been limited at times by weather conditions. At a later time according to my further interest I have selected some tracings to be copied in ink and then reproduced; the process of selection has been dictated by other concerns and the focus of interest in the text. I could have focussed on other aspects of the engravings in my fieldwork, such as depth of groove, angle of tilt and direction of the rock face, but I have limited the data as I have progressed to what seemed to be relevant to the direction and concerns of the thesis as it progressed.

As I have stated this is only an introductory outline of my own approach to the subject and fieldwork methods, and I will deal more fully with the subject under Recording and Methodology.

Childe (1956, 4) stated, "The Archaeologists' quarry is valued only as a clue to something else - the activity and mentality of their makers and users." This I think supports my claim that this study falls within the framework of archaeology. I would prefer however not to be bound by one discipline. In many areas of study it would seem essential to ask and attempt to answer questions that fall between disciplines or cross the boundaries. To put it another way, in order to attempt a more complete analysis it is useful to use conceptual tools from a number of disciplines. This I feel is especially true of an area of study such as Rock art, which in spite of much rigorous work by students such as the Abbe Breuil, Leroi-Gourhan, Anati in Italy, and Meighan in the U.S.A. still has to fight to some extent for respectability and a niche in academic circles. Thus I will at times find it useful to draw upon a number of disciplines, in addition to some methods and thinking which has evolved more recently as autonomous to Rock art itself. The use of this varied background has resulted I believe in enabling me to highlight a number of useful and important aspects of the material studied, to suggest some new ideas and approaches to analysis, and to leave some suggestions for future study and development. However I can in no way claim to have achieved a complete and absolute explanation of the data in question, but by using some new approaches and looking at earlier material in a new

light I feel that the thesis does make a small contribution to knowledge, in suggesting some of the ways in which the art might be viewed.

Since I use this broad multidiscipline and multivariant structure in the thesis it has been necessary to limit carefully the avenues which I explore. At an early stage in my studies I worked on comparative mapping between the petroglyphs and other archaeological finds; the results can be seen in the appendix and the folder, and I discuss the matter later in the thesis. I subsequently decided to focus on the following areas which seem of importance to the field of study and have been stimulating and of interest to myself.

My chapter on the Literature is a quite expansive and critical look at the history of the subject, searching for ideas or leads from earlier studies which may have been overlooked, or only become apparent in the light of later developments.

In the next chapter on Definitions of Art I look at the question of ethnographic analogy, also aspects of art theory and the sociology of art; in the first place this is to examine their relevance to the Cup and Ring material, but it is also to point to certain principles related to space and referred to later in the thesis.

In all science the area of recording and methodology raises much discussion and I feel can never be taken for granted. Since

the first early hand drawings of petroglyphs developments in technology have given us many new tools for recording, however the same broad questions concerning objectivity still continue. I therefore felt it was essential to deal with this topic in some detail. This also seemed an appropriate point to raise questions associated with the process of classification and the identification and definition of style, since in the last part of my final chapter I put forward an approach towards a typology for the Cup and Rings.

The question of chronology raises some large problems in the study of all petroglyphs, especially the Cup and Rings, but it is of considerable importance. I therefore use a whole chapter to discuss dating and chronology. Although I try to analyse many theories and much available evidence with care and in detail, inevitably the nature of the material does limit any absolute or definitive outcome.

In the final chapter I draw from various approaches which have been used on other ethnographic or rock art material in order to discuss and justify my theoretical approach. I then focus on three main issues. first an analysis of the use of space within and between symbols and the environment, which in turn leads to a definition of underlying structural social principles; second the development of a grammatical syntax; and lastly I suggest an approach to a typology. Although as I stated previously these avenues lead to no complete break through in our understanding, I

hope they do make some small contribution to the process of knowledge. The use of a grammatical syntax presents a new way of defining images or symbols which does not rely on the often dubious definition of figurative or "literary" forms; it also opens the door to the possibility of a typology, which I demonstrate. The question of space not only gives us a possible lead towards structural principles and then an insight into social structure, but also induces a new way of examining the rock and its group of images, as opposed to the more common focus on the individual symbol.

The thesis therefore does not follow either a strictly anthropological approach or a traditional archaeological enquiry. It partakes of the views of many authorities, from several disciplines, as well as my own concepts of art. I hope that it represents all of the viewpoints fairly, while at the same time leading from these into some new thought, or closer definition of thought concerning the specific subject of the Cup and Ring engravings.

## A Survey of the Literature.

### Introduction.

Since the literature on any thesis such as this must be large, the first question is in what way to limit it in order to make a cross sectional survey and an evaluation.

In this chapter I will only be looking at work which deals directly with the Cup and Ring carvings on natural rock and on some cist covers of the British Isles with a brief look at Galicia as well. These works deal with descriptions, relationships to other finds, or make some approaches to 'meaning'.

My main aim in this short introduction to the chapter is to state some of my own views and premises concerning the research process. This may help to make clear my starting point for critically analysing the research work of others.

Although Rock Art, and especially petroglyphs, have been very slow to gain a respectable niche in academic bodies of knowledge (which in itself provides an interesting problematic), when one begins to look at the literature on the Cup and Ring carvings, one finds that they proved a steady interest to many of our Archaeologists since the first half of the last century; although



possibly at times more so to the dedicated amateur than the professional.

As I have said Rock Art has been slow to gain 'academic respectability'. We may make an exception for the Palaeolithic Cave paintings; but the equally vast numbers of engravings or petroglyphs found in Palaeolithic caves have received far less publicity, at least until more recently with the work of Leroi Gourhan (1965 1968) and others. The huge amount of rock engravings found in Scandinavia, France, Italy, Spain, N. Africa and most other European countries, usually of Neolithic or Bronze Age dating, has received only scant attention, remaining the concern of a few dedicated outsiders. To some extent this is surprising, since when axes, potsherds or postholes are located, great inferences take place, theoretical debates, dialectic discussion, and conclusions develop. Yet in many places such as those mentioned above, and including the British Isles, there is a vast richness of archaeological finds which remain relatively untapped, seen presumably as too difficult and problematic to deal with.

One factor is that as visual symbols are frequently designated as Art, rock engravings may be seen to fall between disciplines of study. However within the Archaeological approach, carvings on natural rock have equal distribution factors and spatial characteristics of other 'finds', and are even more open to the same forms of analysis since we can normally assume that they are unmoved. Although associations may be less obvious or 'integrated'

than with many other finds, such as objects found in burials or stratified sites, nevertheless associations are found in some cases; questions can then be asked and conclusions or inferences drawn. We must however admit a fundamental difficulty for natural rock carvings such as the Cup and Rings, and that is the question of dating.

As stated above associations tend to be far less definite than with many 'finds', and when samples occur in datable cists etc. there is often indication that the carving was carried out some time before. Stratification seldom occurs, radiocarbon methods are inapplicable. Thus without dating it is difficult to associate petroglyphs with other artifacts or cultures with any degree of certainty; and then to use them to help solve the larger questions of Archaeology.

This theme will be dealt with more fully later in the thesis, I mention it here only to help with the question, why there may have been a past reluctance to deal at any depth with rock engravings.

It may well be traditional theoretical frameworks of perceiving the world, which have led archaeologists to build concepts of 'cultures' upon a number of similar pottery finds, but to draw back from inference built upon numerous rock engraving finds, all with considerable similarity.

As Nordbladh says, "In Archaeology it has always been a problem what made man. At one stage he was a creature that used tools. Later his ability to use and devise his own tools was stressed as the criterion. However Archaeologists working on Prehistoric images can also easily make their concept of man - a symbol- using and symbol- making creature" (1978, 63-78).

Of course here Nordbladh is not only referring to the engraved or painted image, but he also includes all objects and artifacts as symbols involving social relations and meaning as well as having pragmatic practical functions.

As we look at the written work on the Cup and Ring carvings of the British Isles we will find different depths of penetration and approach to the material. Invariably the descriptive is present with varying degrees of expertise; comparative material in the British Isles or abroad may be dealt with, and often an attempt is made to establish a broad chronology; finally there is at times an attempt to hypothesise meaning or meanings. Invariably there will be a considerable unsupported leap into the area of meaning after the other work, but this is hardly surprising.

Piggott (1982) states what he sees as the limitations of Archaeological investigation. Yes to technology, economics, trade and also chronological sequence, but social organisation is only possible by inference and analogy, and language and religion almost impossible.

Thus many may be starting too far away by attempting to interpret pure meaning. For Nordbladh (1978, 63-78) the petroglyphs may give valuable clues to social organisation irrespective of meaning. Bradley (1984, 1) elaborates the question more clearly by presenting us with Christopher Hawkes' (1954, 161-2) 'heirarchy of inference',

"To infer from the Archaeological phenomena to the techniques producing them I take to be relatively easy --- to infer to the subsistence economics of the human groups concerned is fairly easy. - ---- To infer to the social/political institutions of the groups however is considerably harder --- To infer to the religious institutions and spiritual life may seem superficially perhaps to be easier ---- (but) in general I believe unaided inference from material remains to spiritual life is the hardest inference of all."

Thus many have retreated and limited their aims as M. A. Smith, "A recognition that archaeological evidence when it is confined to material remains demonstrably supports only a limited range of conclusions about human activity " (1955, 5).

To me this view is understandable. It has led Dubelaar (1986), in his recent important work on the South American petroglyphs, to be very wary of approaching ideas about meaning, as he also is in lectures and seminars. I feel he would find considerable sympathy with M. A. Smith. Dubelaar's argument is almost the simplistic

positivist one, that we can only accrue data and facts, and one day when we have enough we may understand. This does not deny the respect I have for his achievement and work. When I see some of the incredible flights of the imagination which are at times generated by petroglyphs a few of which I will mention, I tend to find myself in sympathy with Piggott, Hawkes, and Smith regarding progress in the understanding of religion or spiritual beliefs. It is partly this sympathy that leads me in the direction I take in the last chapter. However man has been faced by equal imponderables in the past, and I do feel that the views of those like M. A. Smith and Dubelaar who claim that it is not possible to attain understanding in certain areas, at least at the moment, can be seen to negate the essential dynamic nature of the dialectic of knowledge in the search for explanation. A hypothesis or theory is constructed after careful thorough investigation of all the available evidence however scanty, and with the use of a sound logical process, although it is always open to questioning and hence change as further evidence and new technologies appear. Thus I suggest that if one stops short of theorising in certain areas owing to the apparent insufficient evidence or data, this would seem to deny the dynamic of knowledge.

Childe (1956, 1) does not appear to deny the goal of attaining this understanding; he sees the goal of archaeology as being the recapturing of thoughts of those who enacted certain behaviour in the past. He does of course emphasise that it is the understanding of the group thoughts and purposes which are searched for (1956, 7). Nevertheless I feel he by no means minimises the problem. He admits

that the bulk of the record is within the 'material culture', and that all actions are not to satisfy basic human needs; and very important but perhaps unfortunate for the archaeologist, he claims (1956, 43) that men often act for the sake of acting.

I find support in an earlier work of Childe for my view of knowledge stated above. In his criticism of Hulton Webster's History, he makes a plea for a more definite realisation of the dynamic progressive and continual view of history, the organic connected (1941, 1-14).

This I feel must also include ourselves, our knowledge, and its progressive dynamic nature.

I intend to divide the writings on the British Cup and Ring carvings that I wish to look at into four loose groups, each tending to have a particular characteristic as well as a chronological position. Of course this is to a large extent an arbitrary and subjective approach for dealing with the material.

1) First, from the middle of the last century to the end, there were written what I will call the 'six classical works' by Simpson (1864-5), Coles (1894-5, 1898-9, 1902-3, 1905-6), Tate (1865), Romilly Allen (1879 1881-2), Jolly (1881-2), and Hamilton (1886-7). These are mostly articles except for two cases; they are thorough on descriptions and location of the Cup and Rings in their chosen area of England or Scotland; together they provide a valuable

corpus of engravings, which although they have been added to more recently, also document some carvings now lost or disfigured.

Unfortunately there are no equivalent works for the Irish natural rock engravings. MacWhite's (1946) paper is of importance, which is why I placed it under 'recent classics'; I will discuss it in some detail in this chapter and also later under chronology. To date there is to the best of my knowledge and according to Shee Twohig (per.comm.) only one very inadequate corpus of the Irish engravings, an unpublished M.A. thesis by Finlay (1973). Shee Twohig has herself of course produced thorough work on the Megalithic art, but only tends to document Cup and Ring symbols as they appear in this context. I will be referring to Megalithic art as it becomes relevant regarding dating, in the chapter on chronology.

As we shall see some of the writers above then proceed to look at comparative material, and then often to hypothesise on meaning based on such evidence as they find available, however scanty it may seem to us.

2) Second, overlapping the above works and continuing into this century are smaller articles usually documenting new finds of importance; or works which use a little scanty ill-considered empirical material from other sources, then take off into flights of fancy on meaning, such as L.M. Mann (1915) on celestial bodies. Nevertheless bearing in mind my statement on knowledge above, even

this may provide a source of divergent thinking and a take off for more rigorous work.

As we proceed into this century smaller works documenting new finds become less common, since with the increase in agricultural exploitation of the land and reafforestation, many more stones tend to be lost or destroyed than found. This I found especially true in the Tay valley, where a number of documented sites had been chewed up by the reafforestation process. What were once immovable mounds of natural rock, with modern technology become movable and disappear.

3) A third grouping useful to consider are those works which concentrate on the mobile or movable carved stones found on cist slabs or in burials.

4) Finally I will look at a number of important major works, or what I might call more recent "classics" on the Cup and Rings. Starting with Breuil (1934), then MacWhite (1946), and more recently Haddingham (1974), much concern has been given to the relationship between Megalithic Art and the natural rock carvings in the British Isles and Galicia; Prof. Anati (1963-4) has also made an important contribution.

Simpson and Thawley (1972) deal with a particular aspect of the subject, that is the carved cist covers; they attempt to analyse their origins in relation to Megalithic Art and the Cup and Ring



carvings on the natural rock. Walker (1970, 1974) is one of the first to use rock carvings as finds to be compared spatially with other finds, and one of the first to use computerisation for analysing the Cup and Rings.

Very important will be the works of R.G.W. Morris (1977, 1979, 1981) that have documented a corpus of engravings in Galloway, Argyll, and S. Scotland with immense thoroughness and care, whilst noting some general characteristics across sites, and some tongue in the cheek glances at meaning.

#### Earlier Classics.

No doubt many of the Cup and Ring stones have been noticed, talked about, and become the source of myths throughout the history of the British Isles; but one of the earliest mentioned in literature comes in Tate's book (1865). He talks of forty years before when a Mr Langland observed worn and defaced figures on a sandstone block at the great camp on Old Bewick Hill in N. Northumberland. Some years later when he found others he decided that they were ancient. Even earlier, Tate mentions the existence of a drawing of the Cup and Ring cist slab from Coilsfield in Ayrshire 1785; but this was not actually published until Wilson (1863). Unfortunately as Morris (1981) documents, the history of this slab

becomes hazy and it has now disappeared, it is possible that it is in the Hamilton Museum.

As opposed to the above cist slab, more importance was given when the Rev. William Greenwell found and drew attention to Roughing Lynn 12 miles N.W. of Old Bewick. In 1852 he gave a paper to the Archaeological Institute of Newcastle.

Although I have stated that the Irish carvings seem less well documented than the English and Scottish, at least awareness of them began at a similar time as the English and Scottish. The Rev. Charles Graves recorded the stones found at Staigue Bridge Co. Kerry, with considerable care and accuracy in 1851. Since both the Northumberland and the Kerry carvings were adjacent to Iron Age forts, it is natural that these early observers used this for their interpretation of dating and origins. When we realise that by today's guidelines they were perhaps 2000 years wrong, at least in origins, the problem of chronology begins to be seen.

It could be argued that one of the earliest works on the engravings of the British Isles by Prof. J.Y. Simpson is as good as most that have followed. Written in 1865 and honoured with a complete appendix volume to the Proceedings of the Society of Antiquaries of Scotland, Simpson was a dedicated amateur in Archaeology, but a professional professor of medicine; this may account for the admirable design of the work. It includes accurate recording and observation of all the then known rocks in Scotland

and Northumberland, but leaving gaps in Yorkshire except for Robin Hood's Bay. If the illustrations do appear a little 'dead' and technical in style, I suspect it is mostly due to the current reproductive methods. Simpson gives close attention to carvings on megalithic circles, avenues, tumuli, and cist or urn covers, in addition to noting any proximity to weems, forts, or camps; as well as of course the many carvings on the natural rock; and it is in this way that he classifies the carvings in his work.

Surprisingly perhaps for the time, we are presented with a considerable amount of comparative material from carvings in Ireland, Brittany, and Scandinavia.

Building on this foundation of empirical knowledge, or at least taking off after it; Simpson plunges into a rational debate that is wide ranging on ideas of origin and meaning. Considerable time is spent on assessing ideas of Phoenician origins which may have given rise to pre-Druid solar worship and Baal connections, a subject that is raised again at a later date by Lethbridge (1957). At this point there is some wandering and indulgence by Simpson into the assumed ceremonies of the Baal worshippers;

"We know from this and various other sources that the Phoenicians or Canaanites and the worshippers of Baal had no remorse against the barbarous ceremonies of the sacrifices of infants and subjects, even of their own race " (Simpson 1865, 104).

The only value of this might be to remind us that with the carvings we may be receiving as a find only a fraction of the total ceremony, structures or apparatus, that was involved with the site in the past.

When considering the possible ornamental nature of the Cup and Rings, which is a concept I find used in many different ways in the literature; Simpson falls into the pitfall which is present in some later works, of confusing or merging in discussion the natural rock carvings and the Passage Grave carvings - Megalithic Art. However I could be unjust to Simpson since he certainly ends this topic with clarity.

"The two plates XXVIII and XXIX are given with a view of showing the highly decorative and ornamental style of some of these Irish lapidary sculpturings as compared with the comparatively ruder and simpler and hence in all probability earlier Cup and Ring cuttings which are found on the archaic carved stones of Scotland and England " (1864, 68. ). and

"--- our Scotland and English Cup and Ring carvings and representations of natural and artificial objects which along with circles and zigzags exist in the cairns of Brittany, - and are consequently according to this mode of reasoning to be carried back with them in their origin to the so called Stone Age " (1864, 121. ).

It is interesting that most of Simpson's broad ideas on dating are not unacceptable today. From his observations of the carvings connected with various graves, burial mounds, cists etc. many of which he feels are Pre-Bronze Age without metal artifacts, he concludes that the carvings were made with stone. Following from this he decides that,

"The race that first introduced them, the pre-Celtic Megalithic builders "(1864, 133 ).

However in addition he admits that their origins may be even earlier.

Simpson is sympathetic to religious origins, 'probably a fixed community of ideas,' but he makes the important point, that symbols may come into use with one religion or belief, but can continue in use long after the religion or belief changes. It is with Simpson that we first become aware of the possible long period in which these symbols were in use by human beings on the natural rock; probably longer than the use of the cross in Western society, and during which time it appears that technology and social structure changed radically.

Finally it is Simpson who is one of the first to note the unfortunate fact that although the carvings on the cist covers or stones in burials may give us our most accurate chance of dating, much evidence of previous wear and erosion is usually present, pointing to earlier carving and use.

"In some instances the carved stone employed to cover the body or ashes of the dead, or used in the construction of their megalithic cists, seems to have been taken for that purpose from other localities where possibly it had been already regarded as sacred, and had possibly served for other religious purposes " (1864, 104).

One is reminded here of the earlier first naive Romanesque and Byzantine carvings of draped figures, developed and inspired from broken fragments and finds from the classical carvings of Greece and Rome; then developed to the sculptural heights of for example the Chartres figures, firmly embedded in the Christian tradition.

I have given Simpson's work considerable attention, since the corpus he documents forms part of the basis of Simpson and Thawley's work and that of Morris more recently; also some of his suggestions for dating and the longevity of symbols are important ideas in contemporary thought on the subject.

At the same time that Simpson's work was published, George Tate's book (1865) appeared , but whereas Simpson's work covered a wide area, that of Tate was concerned only with Northumberland; nevertheless it exhibits a similar air of thoroughness. He records 53 stones and 350 figures, this includes 4 cist covers and probably 4 more; 5 of the stones are within ancient camps and 8 only about 100 yards from them; most of the others are less than ½ mile from

camps and none less than 1 mile. In Beckensall (1983) a more recent work on the same area, he gives 135 sites some having more than one stone, but some are only traces or references to missing stones.

The drawings of Tate are good, softer and less diagrammatic than Simpson, but still maintaining considerable precision. Soon after the publication of Tate's work, Mr J. Collingwood Bruce produced his collection of lithographs of the carved stones, sponsored by the 4th Duke of Northumberland, Algernon. Again one can only be agreeably surprised and impressed by these naturalistic yet precisely observed illustrations. We are fortunate that Beckensall (1983) has given us the opportunity to compare the illustrations of some stones by these two people, Tate and Bruce, and himself. The differences are not great, but enough to indicate the inevitable subjective decision involved in such reproduction, which unfortunately even photography doesn't eliminate: but since the time span is over one hundred years one must also allow for change from erosion and damage. It will be necessary to return to these points in a later chapter on Methodology.

Like Simpson, Tate's recording work is sound and most valuable, his is the only record of some early discovered stones. He proceeds into the area of comparison, but as with some other writers becomes rather woolly when he compares Megalithic Art with the carvings on the natural rock, without constantly remembering the essential distinctions. Like Simpson he distinguishes between what he feels is the ornamental use of designs and forms as opposed to,

the symbolic; for him the spirals and zigzags of the Irish tombs are ornamental, presumably meaning decorative only. It is interesting to pick up this point when looking at the more recent work of Martin Brennan (1983), who claims to illustrate a practical use for the Passage Grave designs in relation to lunar and solar movements, and equinox and solstices. Looking at the Brittany graves Tate is prepared to see some of the carving as symbolic, but is emphatic that they have no relation to the Northumberland carvings.

The distinction between the Megalithic art and the engravings found on the natural rock, that is the Cup and Rings is extremely important. There is a difference of situation, and to a large extent a difference in the vocabulary of symbols or forms. Megalithic art refers to those carvings which appear on stones which have been or were intended for use in the construction of megalithic tombs, and include forms such as the spiral, serpentiforms, lozenges, triangle, zigzag, and parallel lines (fig. K5, 10), whereas Cup and Ring art is found mainly on the natural rock outcrops, or occasionally on what appear to be random slabs. The vocabulary of form mainly consists as the name indicates, of the cup with the concentric rings, but this can give rise to many complex variations. However confusion can arise between the two groups due to some overlap. Cup and Rings do appear at times on megaliths or passage graves, and megalithic symbols such as the spiral do sometimes appear on the natural rock outcrops. Where the overlap is most complete and mixing occurs is on the group of rock slabs which are at times cist covers, or are found in cists. These are dealt with by Simpson and Thawley whose paper I



will examine later in this chapter. I will look more closely at the question of the relation between Megalithic art and the Cup and Rings under the chapter on chronology.

Tate's answer to the question "by whom" is interesting when we see it in relation to the quotation from Nordbladh I gave earlier. Archaeologists tend to create common cultures from the spread of ceramic types, or tools - technological man; here Tate is suggesting the same assumption from what he sees as the similarities in the natural rock carvings of the British Isles, a 'symbolic culture'. He writes that since the carvings are distributed all over the British Isles, they were therefore made by one tribe. Britain he saw as being peopled by the same race with the same superstitions.

"Their wide distribution not only from the far north in Orkney to the south in Devonshire, but also Ireland, evidences that at a period when they were made the whole of Britain was peopled by tribes of one race who were imbued with the same superstitions and expressed them by the same symbols " (1865, 35.).

It is not difficult to question the logic of this statement, but perhaps no more so than some of the assumptions made about technological man.

It will be necessary to look carefully at the question of how the carvings were made later in this paper; but Tate in his thoroughness considers the question and emphasises a major point,

that is the role of natural erosion on the rocks once they are uncovered. Erosion often changes the characteristics of the lines marks or incisions drastically over the centuries. Therefore it is the recently dug up rocks that can give us the most accurate guidance on technique.

Finally Tate comes to the question of meaning,

"--- beyond these general views I confess we wander into the regions of fancy and conjecture" (1865, 39), and he does! Having said,

"--- that these inscriptions have been made by Celtic races occupying Britain many centuries before the Christian era" (1865, 39).

He then associates the carvings with Druids and their assumed activities.

"Some of the groups of concentric circles may show their ideas of the motion of heavenly bodies ---- the plant like figures may enable them to expound the nature of things as seen in vegetation; possibly the grooves passing from the centre of one system of circles to another might symbolise the passage of a soul from one state of being into another higher state ---" (1865, 41).

It is interesting that both Simpson and Tate reject the 'Map' idea which appears to have been prevalent at the time, in

order to give preference to other ideas, but the increase of evidence from one to the other is far from clear.

Although not on the same scale as the previous two writers, the works of Fred Coles (1894-5, 1898-99, 1902-3, 1905-6), and Hamilton (1886-7), are of importance in laying the ground work of a corpus of natural rock and movable slab engravings in the Galloway area, and use of their findings is still made by recent writers.

Hamilton's work (1886-7), concentrated on the Kirkcudbright area and he limited his work to recording. Kirkcudbright is an extremely prolific and dense area for Cup and Ring carvings, which has suffered in one section from the Army Range, this makes access more difficult and has also resulted in the loss of stones.

Coles work (1894-5), covers similar ground to Hamilton but he extends his area somewhat and the number of sites. His drawings were repeated in different lights, showing again at this early period the problem of 'objectivity' in the reproduction of the image, a point we must return to, but is well illustrated by Nordbladh (1981).

In subsequent papers, Coles (1898, 1902, 1905) spreads his interest to other parts of Scotland, recording new finds or discussing ones previously mentioned by Simpson, in Ayrshire, Perthshire, or Aberdeenshire.

Neither Hamilton or Coles move far beyond recording; although in one paper Coles does make an interesting comparison between the Witches Stone, Tormain Hill, Ratho, with its row of 22 minute Cup marks, and the Fowberry Mains rock in Northumberland with two parallel rows of close minute Cup marks, one line having 46 Cups the other 62.

Just previous to Hamilton and Coles work, Romilly Allen (1879) published his paper on the Yorkshire carvings, thus extending the corpus for the British Isles. Simpson had only included Robin Hood's bay. Allen's work is more in keeping with that of Simpson and Tate since he delineates what he sees as international connections, and then allows himself to hypothesise on meaning and origins.

Allen's groundwork of taking us round Ilkley Moor and describing the major stones with accuracy has only recently been surpassed Hedges ed. (1986). He is the first to draw our attention to the Panarama stone, which although is no doubt within the Cup and Ring vocabulary, has the unique ladder extensions to the Cup and Rings, which as we shall see later leads Breuil to anthromorphise the forms, and others to find Scandinavian affinities. Likewise we are pointed to the unique 'swastika stone' by Romilly Allen which is found again in Val Camonica, Italy. Jacobsthal (1938).

References are made by Allen to comparisons in Ireland, India, and the U.S.A., but he also gives considerable attention to explanation and meaning, examining 6 possible theories. It is

interesting that he as some other authors rejects any planetarium or stella theory, since no relation to the actual star patterns can be found; yet a relation to mythical concepts of stella activity must always be possible. I have already referred to the work of Brennan (1983, 144) who shows diagrammatic relations to stella activity, thus the forms or designs do not equate to visual reality. He looks at the wavy line which is common to Irish Megalithic Art, and demonstrates how this could well originate from the moving line of moon cycles; the idea is supported by the totality of his work and ideas.

Allen feels that a religious symbolism is most likely, although he does not seem to realise that this does not need to be distinct from a stella theory, or other possible functions or explanations.

Later he states, "All Archaeologists who have given the matter serious consideration agree that the Cup and Ring marks have a symbolic origin, otherwise it is difficult to account for the monotonous repetition of the same figure (not used decoratively except in rare instances) and for its occurrence over so wide a geographical area. The irregularity of the Cup and Ring marks on slabs and rock surfaces is possibly due to their having been carved by several different persons at different times instead of having been designed and executed by a single individual--- "(1886, 79)).

Two points need making here; first to see the Cup and Ring

engravings as monotonous repetition is a very subjective view. To one who studies them in detail they exhibit a great richness and variation of form combinations, albeit based on a common basic vocabulary. It is possible that the visual art of this century in Western society has given us a greater visual awareness and understanding in the perception of abstract non-figurative form.

The second point is that I think Allen confuses technique with distribution on the rock surface, ignoring the possibility that there may be a feeling for composition and design. A distinction between these aspects must and will be defined later, as with the factor of superimposition. Of course the possibility of various 'artists' is an important contributing variable which must be born in mind.

Allen continues, "--- the Cup marked stones on Rombalds Moor are in many cases near the ancient trackways across the high ground, and there may be some analogy between the practice of carving these symbols and that of leaving rags on bushes for votive offerings, as is done in Corea and Persia when going over a mountain " (1886, 79).

This is an interesting point of Allen's, since one finds the huge wealth of carvings in the Maritime Alps at the foot of Mount Bego on the pass through the mountains, and again at the base of Mount Meltsen on the Yagour plateau in Morocco (fig. L4 and L9).

As with other writers Romilly Allen also states,

"That the symbols are religious seems probable because they are found so frequently associated with sepulchral remains such as megalithic circles, menhirs, chambered cairns, and stone cists--- " (1886, 80).

This does beg many questions which will be discussed later, but two points can be mentioned in passing; first one can question what is exactly meant by religious, and secondly also question the tendency to see things as mono-functional, stemming perhaps from experimentally assumed cause and effect in the natural sciences. I discuss this more fully in the chapter Art and Social relations.

Finally much praise must be given to Romilly Allen in his paper of 1881-82, not only does he set out to add to the Scottish corpus, building on the work of Simpson, but he includes what is virtually the first listed corpus of Cup and Ring engravings in Europe, giving the situation, class of monument, reference or where described, and map reference if any. Obviously only a beginning, but a very valuable pointer still awaiting further development today, although much work has recently been done at the Institute of Prehistoric Studies at Val Camonica in Italy.

Allen in his work makes no distinction between sites with only Cup marks, and those with Cup and Rings or other designs. In his more recent works Morris (1977, 1979, 1981) feels that he has to

exclude sites with Cup marks only in order to keep his work within manageable bounds. Obviously many Cup marks are associated with their more complex brothers and sisters the Cup and Rings, whether on separate sites or mixed. Yet it is also possible that simple Cup marks may be much earlier than Cup and Rings and unconnected, such as those found at La Ferrassie in France, Aurignatian period, Giedion (1957); or the much later Dalladies stone found in a long barrow with a plano convex knife and given a radiocarbon date of  $3240 \pm 105$  bc or approximately 4000 BC corrected. However if one does exclude Cup marks on their own, one can never be sure that you are not excluding Cup and Rings, since the natural erosion on rocks is far more quick and drastic than one may think. It can be noted in Morris's works how frequently on returning to a site after some years, part of the symbols may be no longer visible or very difficult to see. Since the rings are invariably carved less deep than the cups they are the first to disappear leaving only cups.

Since we have noted the exclusion of rocks with only Cup marks on them from Morris's work, it is interesting to look at someone like Jolly (1881-82) who specialised in them. That is in the Inverness area and in association with the Clava tombs. Jolly recorded 83 stones and included many precise drawings. He records the exact number of Cup marks, their depth and their width, even when some stones have 43 or 98 marks on them. Occasionally a ring or gutter appears, but the rocks mainly have cup marks only. Jolly makes an interesting point from his viewpoint of a century ago which has implications for Archaeology and Rock Art study. He claims to



have come upon many farmers who have removed stone circles, and others who discovered old pots and other finds, but soon buried them again not necessarily in the same place, due to superstition.

#### Smaller Articles.

I will now continue by looking at a sample of the smaller papers which have been written on the Cup and Ring engravings, not perhaps encompassing the breadth of works like Simpson, Tate, or Romilly Allen, but making valuable additions to the corpus of finds or contributing a few interesting ideas.

The area of the Tay valley although giving ample evidence of prehistoric settlement, is also suggested as a migratory route by Lindsay Scott (1951) and others. Unfortunately it has received far less attention in the field of rock engravings than regions such as Galloway or Argyll. This may well be due to the disappearance of many earlier discovered stones, from agricultural development on the valley slopes or reafforestation, as I have indicated before. Some indication of the richness of engravings in the area can be seen in Stewart (1958-59, 75), but I was unable to locate some of these stones in 1984. Thus there is no real developed corpus of these rocks, but in 1894 Haggart gave a paper recording two important sites in the region, giving early photographs and descriptions. First the large outcrop at Duncroisk, 8-10 foot high and approximately 200 yards long, perhaps one of the biggest sites in the British Isles; recently it has been well documented again by

Morris (1981). Haggart also deals with the site at Braes of Balloch near Taymouth castle. Maclarine (1919) adds a few more sites, and Alison Young (1937-8) documents Cup and Ring stones on Graig Ruenshin above Birnham.

I have mentioned the problem of dealing with the chronologically wide-ranging Cup marks. Jolly's work was an early recording of this type of stone. Later Mann (1921-2) recorded the Cup marked rocks in Tiree. Again a difficulty appears, since at the same time Mann deals with basin stones, that is the larger man made hollows in the natural rock. These have historical records of myth and usage. They are recorded for Ireland as Bullans, and some of their myth and usage is given by Wakeman (1874-5). The problem obviously is at what point do Cups become Bullans or basin stones? Some times with isolated large basins it may seem obvious, but in mixed situations with other symbols, and not such a distinct size the problem is complex. The problem is even extended when one examines the particular form of cup mark with concentric circles found at Maugaraul, Donegal; these are frequently 3 inches or more wide and have a flat horizontal base (fig. G2 and 4).

At Blackshaw, West Kilbride, is found another of the larger engraved rocks of the British Isles. Many of the symbols are faded from erosion, and now much of the rock is kept covered. This important rock has not only a large variety of Cup and Rings on its surface, but also 300 Cup marks, including the less common 'horseshoe' cup marks which tend to be deeper on one side. In

addition there are some faint dotted spirals, a symbol that is far more common in some Megalithic art than on the natural rocks. This rock was first recorded by Boyd and Smith, but communicated by Cochran Patrick (1886-7). It is a good example of precise observation and description, without venturing into the realms of comparison or meaning.

The first part of Christison (1903-4) deviates a little from our subject, since he delves into the geological origins of the standing stones in the valley of the Add, Kilmartin, Argyll. They are found in this area virtually ready made, as diorite rock outcrops with quartzite forms which have been rounded by glacial action. This again reminds us of an additional problem to the question of the Cup marks in isolation, since many can be natural formations in the rock.

The second part of Christison's paper looks at two Cup and Ring sites in the Kilmartin area, that is Cairnbaan (fig. B8-10) and Kilmichael (fig. B5-7). First one should notice the extremely high standard of the rubbings that are reproduced in this article. The merits of the various methods of reproducing petroglyphs will be discussed in a later chapter. Rubbings do have some disadvantages; difficulty of execution on rugged surfaces, and a certain degree of distortion of the grooves, but Christison's work would tend to lead one to see reproduction by rubbing when possible as having some advantages over other methods. It should be noted that these are not small rocks for rubbings, Cairnbaan I is 20 feet by 6 foot and

Cairnbaan 2 is 11½ feet by 6½, while Kilmichael is 25 feet by 15 feet, and both surfaces are far from flat.

Christison's visual description and analysis of Kilmichael is very penetrating. He suggests three areas or bands on the rock, each having its dominant symbols, a top band with cups and pear figures, a middle band of mainly dumb-bells, and a lower area of pear or tongue shapes reappears but with more complex and grooved groupings. It is perhaps regrettable that Morris in his excellent work gives this rock a much more cursory treatment, merely admitting that it does have a "fine assortment of designs" (1977, 100).

I feel that Christison is pointing a way that analysis might proceed; a detailed analysis of forms with spacing, grouping, placing, scale, and variety, all closely recorded. As I said earlier it is necessary to become ever more visually aware of the variety and richness of the apparently abstract material. Christison is one of the few writers who seems prepared to consider 'grouping' or perhaps composition on the rock. He claims that 'order' can be noted on the Cairnbaan rock, that is a tendency for grouping in threes.

Finally Christison takes a step in a direction with which I have great sympathy. He points to the great difference in forms between a rock like Kilmichael Glassary (fig. B5-7) and that such as Cairnbaan (fig. B8) with its large number of Cup and Rings, some with up to four rings and tails. I would also wish to add a possible comparison with a rock like Ormaig (fig. M) with its own distinct

type of Cup and Ring; rings of smaller cup marks within the concentric circles. In the chapter on chronology I will make a closer comparison between some chosen sites. Perhaps for too long we have used the blanket term Cup and Rings, and induced self blindness to the richness in front of us. Christison is an earlier writer who seems to feel his way beyond this.

Again if we look with perception across sites and between symbols, a considerable variation in 'the feeling of the line' can be seen. Frequently this can be due to erosion, but of course also to execution. On a large rock such as Achnabreck (fig. A 1, 2, 4, 5, and 7-10) both of these factors can be noted. Edwards (1935) recorded the engravings on Traprain Law, East Lothian, Scotland. These have an unusually distinct fine line. They do not include Cup and Ring forms, but have many varieties of parallel line patterns and symbols. Execution appears to have been made by a metal tool cutting or scratching into the rock. This makes them unique in line and feeling to all other British Isles engravings, and only having echoes in the petroglyphs of the Paris basin (Gilles Tasse 1982). These engravings are a mystery; unfortunately they are mostly now quarried away, and only samples remain in the National Museum of Antiquities, Edinburgh (Morris 1981, 157).

Although the whole question of the Cup and Ring petroglyphs poses a large mystery, Haddingham (1974) whose work I will look at later, calls his book "Ancient Carvings in Britain - a Mystery." Within this mystery are many smaller mysteries, one is the carving

of what appears to be two left hands. These were only first recorded by Miss Campbell (1960); they were noticed built into a wall next to the canal at Barnakill, south of Kilmartin. In 1963 Dickie wrote a further paper on them, followed later by Morris (1977,60). It was Dickie who suggested that there were other kinds of carving on the other side of the same rock, but Morris was unable to locate them. If he had they may have helped relate these isolated and absolutely unique (at least to the British isles) carvings to other sites or periods.

A similar situation arises with the one carving of a deer at Glen Domhain. First recorded in the Argyll List (1915), and then a number of times since, finally by Morris (1977,85). It again has aroused interest due to its uniqueness; however since it is relatively unweathered it could well be far more recent than the Cup and Rings. When we do come to discuss the engravings in Galicia, many of the Cup and Ring carvings there are associated with deer carvings (fig.J7), and many are close in style to the deer at Glen Domhain. This has naturally aroused interest, especially since a number of observers including Morris have indicated a possible carved circle above the deer figure. Pursuing this line of thought, it is Feather (1964) who claims to identify a 'Gallician deer' adjacent to the Cup and Ring marks on a rock at Ford, near Kilmartin. Feather follows this up as a possible clue to a relationship between the Scottish carvings and the Galician. He completely rejects the Glen Domhain engraving as a more recent happening. The whole discussion is a little flimsy being based on a

single piece of evasive evidence. Yet as we will see the common forms of the Cup and Rings in the British Isles and those of Galicia strongly indicate some relationship.

There are a number of articles on the Cup and Rings which use a considerable flight of the imagination to explain uses for them. That by Browne (1921) which I mentioned earlier in the introduction, first draws attention to the Cup and Rings or cup marks on various standing and recumbent stones; these are frequently associated with stone circles a point I will look at in connection with Thom's work a little later in the chapter. Browne gives us with what I feel is some conviction, an explanation for the use of two stones, that is the Sin Hinny stone and the Rothiemay. He claims to identify various constellations among the many cup marks and occasional Cup and Ring. These constellations he claims are carved in reverse, and from this he suggests the possibility of a 'print off' on skin of a star map. One can argue of course that it is possible to identify at least one of the constellations in any group of dots; however the idea does carry more conviction when three or more constellations are identified more or less in the correct relation to each other. This is what Browne claims. It is possible that the idea might be seen to have more strength when we consider that these stones are or were associated with stone circles, which have been seen by some, such as Prof. Thom, to have stella and lunar associations. However many other such lunar and stella explanations may well fall outside the bounds of legitimate archaeological explanation.

As we have seen Romilly Allen as early as 1896 recorded a

quite detailed summary of the engravings on Ilkley Moor. In a short paper Cowling (1936-8) described the rocks found on the Western and Snowden Moors, north of Otley. From this it is interesting to return to the points arising from Christison's paper above. The rocks on Western and Snowden Moors do tend to show a unified grouping which makes them somewhat distinct from other areas. The forms tend to be linear or have narrow gutters, interweaving and ending in, or encompassing cup marks. Cup and Rings do appear occasionally on these rocks, but there are no 'key hole' shapes or commas, that is distorted or developed Cup marks. Cowling's work is a model of valuable recording, with a high degree of objectivity, without venturing into the question of meaning or explanation.

Important carvings are not always recorded after direct intentional visits. In 1876 a group from the Berwickshire Naturalists club took a boat trip on the Coquet River; their voyage took them past rock cliffs on the banks of the river near Morwick Mill, and here are found at a height of between 2 and 20 feet an extremely interesting set of carvings, which differ considerably from most other sites. This is mainly due to the presence of spirals - single, linked as doubles, or with other forms, thus seeming to have more in common with Irish Passage Grave Art, than perhaps the Cup and Rings on natural rock.

Charles Douglas (1876) related the event in his Anniversary address. A more precise recording was made by Hardy and Dand (1882-4). They also drew attention to the camp behind the cliff. Since



then these carvings have evoked continuing interest. They appeared in the History of Northumberland (1899 and 1940). Dodds the editor in 1899 describes and illustrates the forms well; of especial interest is the form of concentric circles with a ring of small Cup marks surrounding it, and an extension built on the side with another small Cup mark. It is a form that can evoke comparison with other countries, but it does seem to be unique in the British Isles. However Dodds takes the opportunity of comparing the double spirals found at Morwick with those to be seen at the top of the large rock at Achnabreck (fig.A5), Kilmartin.

In their paper on the Doddington Moors of 1956, A.H.A. and N.Hogg blend their recording of Cup and Ring engravings with steps towards some degree of dating and explanation. The paper may not take us all that far towards precise dating, but it is of interest since the writers try to base conclusions on observed empirical material. From spatial proximity the authors assume a relationship between forts, huts, and enclosures on the moors, and the Cup and Ring carved rocks.

"To the East and South are several earthen banks now much reduced by cultivation. These were also probably connected with cattle rearing. Three of them converge on a group of incised rocks. This suggests that the carvings were a known landmark when the the banks were built " (Hogg 1956, 142).

Although the writers use "suggests" and thus admit an area of doubt, it is a reasonable tentative hypothesis to make given the available material. The banks and other remains can be dated by their style, and from the above conclusions the carvings are seen as probably earlier or contemporary.

Dating of carvings is extremely difficult, and it is only by such tentative hypothesis, then comparison with other perhaps equally tentative ideas, but built on different material, such as cist covers, cairns or barrows, that a broad dating or chronology begins to appear.

Earlier I stated that I felt that Ireland had been less well documented for Cup and Ring engravings than other parts of the British Isles. This I think is true, perhaps because so much interest has centred on the carvings of the magnificent Megalithic tombs. However smaller papers on the Cup and Rings do appear quite early. Wakeman (1874-5) produced a paper on the engraved rocks in the county of Fermanagh. He starts with simple Cup marks, but then moves on to Cup and Rings on the rock at Boho. The carvings are quite simple, only sparse examples of Cup and Rings among the cup marks. Later in the paper Wakeman moves on to describe Bullan stones, basin stones that I have mentioned before; with these he seems happier since they lend themselves far more to myth and whimsy, which I feel the writer enjoys!

In 1876-8 Wakeman and Graves both produced papers describing Cup and Ring stones. Wakeman again seems absorbed by mythical associations, which become virtually unsubstantiated chat, even if of literary interest and enjoyment. Nevertheless I found myself quite impressed by references to similarities with carvings in South America and New Zealand, at this early date. One easily forgets that it was the heyday of English Imperialism and hence widened knowledge of the world, stimulated by great curiosity. It was demonstrated also in Romilly Allen's work on Ilkley mentioned above, when he ended with comparisons of carvings in Ireland followed by India and the U.S.A., including the appropriate references.

A little less 'romantic' than Wakeman's work, is the paper by Rev. James Graves (1876-8) in the same volume as Wakeman. He appears to be reiterating almost exactly (he misses out the complete map of the Staigue Bridge stone) the earlier work of the Rev. Charles Graves, possibly a relative, in Vol. XXIV of the Transactions of the Royal Irish Academy (1860, 421-31). About five sites in the S.W. of Ireland are described with excellent illustrations; it is interesting that one of these the rather feint engravings at Staigue Bridge, has the unusual single thin concentric circle at some distance in radius from the cup mark.

Before moving on to survey papers that record or deal with the Cup and Rings carved on mobile stones and in association with cists, barrows, or cairns. I will describe an interesting discussion that took place between the writers of two or three small papers, in

relation to an Irish carved stone. It is I feel an essentially profitable form of debate which unfortunately does not seem to appear in the literature enough. although the debates in the recently established Australian journal "Rock Art Research" at an international level, compensate for this need admirably.

In 1963 Prof. Anati was asked to visit the recently discovered natural rock engravings at Derrynablaha and to report on them. This he did extremely well, and it led to a useful discussion of the origins and dating of Irish Rock Art in general. I will look at this quite substantial paper a little later. Within Anati's recording he mentions one smaller separate loose stone, his rock number 10a (fig. H1), which had a Cup and Ring with three concentric circles and a ring of small cup marks between the outer and the second circle. The middle circle was shown as gapped, and the outer one with a dent, or notch at the bottom.

J. Coles (1965) observed this and suggested that it was a representation of a late Bronze Age shield, which would indicate a somewhat later date for the carvings.

However Shee Twohig and O'Kelly (1971-2) in their paper "The Derrynablaha Shield again," dispute Coles assumptions claiming that the stone is damaged at the point of the dent or notch, and actually the form would equate to a more conventional gapped Cup and Ring, but with a ring of cups inside; they then give other examples of this design from Pontevedra in Galicia, from Ireland, Galloway and

Cairn T at Loughcrew. None are exact replicas, but the wide use of similar forms in differing contexts does seem to question whether the design is a figurative rendering of a shield. The authors then adjust the date to late Neolithic or early Bronze Age. I will leave the question there, but it is an interesting follow on that Walter Torbrügge (1968) in his well illustrated book on Prehistoric European Art, has no hesitation in stating that it is a Bronze Age shield presumably since his book comes before Shee and O'Kelly and after the Coles paper. Personally I would think that this is by no means a closed discussion, since the form in question which also appears at Ormaig in Argyll (fig.M), is one form which is definitely found in the Cup and Ring repertoire and on Bronze Age shields, in addition to being a decoration found on the large Bronze Age musical horns. As can be seen in the photograph, erosion and weathering must play a big part in any present discussion. I feel that it would have been advisable for this stone to have been placed in a museum.

#### Mobile Stones and Cist Covers.

In the world of British Isles rock engravings there is a 'fringe' area, but one of considerable importance. That is the 'cist covers', smaller movable slabs of rock usually found as cist covers or within graves. They are frequently engraved with the more conventional Cup and Ring designs, but may include spirals, lozenge, zigzag, diamonds, or even foot prints and axe shapes. These latter forms are more often found in the Passage Grave Art of Ireland or Brittany, or in some cases they are unique. Thus not only do these

slabs suggest some connecting link between Megalithic Art and the Cup and Ring engravings, but since they are normally integrated closely with burials the question of dating becomes possible.

A considerable number of papers have been published over the last century documenting and discussing these finds. They tend to culminate in a more recent larger paper by Simpson and Thawley (1972). Unfortunately because of their mobile nature and practical use, these stones have frequently been lost or have disappeared, thus past recording becomes vitally important; many have of course found refuge in museums, but may go unnoticed at times in storage.

I will refer to a few of the interesting papers that deal with cist or urn covers, or carved stones in barrows. I will not necessarily exclude stones that only have Cup marks on them, although in these cases reservations are necessary as previously stated.

I commence with an early writing since it does have a particular interest being in the South of England; that is Charles Warne's communication to the British Archaeological Association in 1848, on the excavation of three tumuli on the Came Estate near Dorchester. These were apparently quite large, involving '2000 cart loads of soil', a bronze dagger was found in one. The last tumuli to be excavated was 90 feet in diameter and contained the stones.

"About the centre at a depth of some three feet from the surface was found lying flat a rough unhewn stone with a series of concentric circles inscribed; this on being removed was seen to have covered a mass of flints from six to seven feet in thickness which being also removed we came to another unhewn irregular stone with similar circles inscribed, and as in the preceeding case covering another cairn of flints, in quantity about the same as beneath the first stone."

"It will be seen that the most singular feature connected with this tumulus is that of the incised stones."

The most important aspect of this early find is the presense of Cup and Ring stones in the South of England. There are a few more cases of Cup marked stones in barrows in the South but there the evidence ends. It is usually assumed that the Cup and Ring carvings do not commence until Yorkshire; whether this is a cultural reason or a practical one due to the lack or presence of rock is debatable; but so far no Cup and Ring marks have been found in Wales or on the natural rock in Cornwall. This paper indicates that the symbols could have had cultural meaning in the South, and there is always the possibility that they could have been executed at other times on perishable material.

The association of the bronze dagger and the type of barrow or tumulus gives dating indications for the stones, but this can

only give the latest date, the stones could always have been carved earlier, then adapted.

Three years before the above paper in 1845 a stone was found in Badbury Barrow Dorset. Piggott (1939) writes about it and its possible implications. This stone had no concentric rings only five cup marks, two triangular areas (possible axes), and two apparent dagger forms.

"--- oval pommels thrust into their sheaths the mouths of which form secondary projections echoing the pommel outline."

Connections with other British natural rock engravings are far less evident, but axe carvings are found on cist slabs of the Cairn of Nether Largie 2 at Kilmartin Argyll, and again on the slabs of Ri Cruin cairn in the same area; daggers are almost unknown except perhaps for the controversial carvings on Stonehenge. However as Piggott states these forms are all common in Brittany, and daggers are also a dominant form in the Mt. Bego area of the Maritime Alps, and common in Val Camonica, N. Italy.

Questions can therefore be raised about cross Channel connections at the time, or influences coming from the North of Britain. The daggers could relate to what Piggott suggests as 'Pommel daggers from N. Italian prototypes coming to England via Brittany. An affinity can be seen with the Copper and Bronze daggers which were



found in the Bush Barrow. Megaw and Simpson (1979,209) place this into Wessex 1 of the Wessex culture, which commenced at the beginning of the sixteenth century, Wessex 1 being the first of three sub-groups as defined by Gerloff (1975). Coles and Harding (1979,258) suggest close cross channel links thus echoing Piggott's ideas.

Since mention has been made of axe carvings in the cist of Ri Cruin, it is relevant to mention Craw's (1930-31) paper on the excavations on the Poltalloch Estates. As well as the stone with the axe or halberd carvings, a long narrow stone was inserted upright in the cist. Morris (1977,117) gives a good description.

"A narrow slab inserted upright in the same cist about 1m by 1/4m by 1/4m (3ft. by 9ins by 9ins) said to have been lost in the Poltalloch house fire, but a cast of whose carvings is in the National Museum 1 Queen Street, Edinburgh, had carved on it a staight line about 80cm (31½ins) long from which projected 10 short lines at right angles to it, said by some to be a ship."

This mysterious slab has provoked much discussion over the years. It was first written up by Mapleton (1891), who thought it was Ogham letters. It obviously lends itself to considerable comparison outside the British Isles. First as Morris states the ship figures of the Swedish petroglyphs. Craw looked at the ship question, claiming another ship carving at Wemys Fife, but Morris (1981,83) shows a photograph of this supposed ship at Wemys Fife and it is considerably different to the carving that was at Ri Cruin. The Ri Cruin symbol is

rather simpler than the Swedish forms; closer perhaps are the cob and rake shapes found in the Passage Grave of Mane Lud in Brittany (Twohig 1981, fig. 98-99).

Ashbee (1958) in his excavation of the Tregulland Barrow in North Cornwall found two Cup marked slabs inside, on one he claimed a possible eyebrow device, however it could easily have been a natural abrasion. Ashbee indicates from his sketch map that the association of the Cup marked rocks with barrows and cist covers is quite common in the South West and West of England, there being at that time approximately ten examples, but not of Cup and rings.

Perhaps it is important to point out again that it is easy to become visually unaware of material when relying on the general term, in this case Cup marked, or simple Cup marks. An almost infinite variety of scale, placing, and arrangement is possible with these forms; Jolly's work draws attention to this. I noted at Oukaïmeden in Morocco (fig.L7) that they often appeared in regular sizes and placed in parallel rows; similar arrangements are found at Fowberry Park in Northumberland, and the Witches stone at Bonnington Mains now destroyed (Morris 1981, 142).

Rather subtle variation can be seen in the work of Savory (1940), writing on the stones found in 'A Middle Bronze Age Barrow at Crick'. There were two stones, one was 5ft. 8ins x 1ft. 7ins x 2ft. 2ins and it had 23 Cups 1½ins - 3ins diameter. The other 2ft. 4ins x 1ft. 9ins had 17 Cups less than 2ins diameter but many less than 1in.

It is enough to indicate a smaller scale on one stone, but for closer comparison between stones and sites, on Cup mark placing and design, more precision would be necessary, with as great attention to spacing as to the forms.

Another controversial slab which has aroused much discussion is the Badden stone. It was found in a field only a mile or so from Lochgilphead in 1960, and written up by Campbell, Scott, and Piggott (1960-1). The slab is 1½m x ¾m x 7cm and has carved on it,

" 8 triple and 5 double lozenges each with a cup or dot in its centre, the greatest diameter 30cm and ½cm depth, all arranged in a curtain edge like freeze (Morris 1977, 51)."

Important is the fact that the ends of the slab are rebated as though to take sides. Unfortunately this stone was not found in an actual cist, it is however assumed to have come from one. Although having no relation to the Cup and Ring family, lozenge shapes are common among Irish Passage grave forms. In spite of this the authors move in a different direction and suggest connections with wooden graves with decorated textile or skin hangings, as found with the single cist cultures on the River Saal. Powell (1960) extends the discussion to embrace the axe forms on other Kilmartin cists as already mentioned, and describes oval forms at Dölau which includes a skin bag for amulets hanging on the wall and five axes standing vertically. Thus he rejects any connection with western passage

graves, and finds echoes of Caucassian 'house graves' or funerary parlours.

We have looked at rather unique forms on cist slabs, but many others do have Cup and Ring type forms. Piggott and Powell (1948-9) excavated the burial chamber of Cairn Holy, Galloway. Inserted in a secondary grave was a slab 50cm x 38cm x 14cm and carved on it a Cup with six rings, 2cm diameter. This form had no structural function in the grave but was propped up as presumably a valuable symbol accompanying a Food Vessel.

Truckell (1961-2) in his paper includes the Cairn Holy slab in his discussion. He points to the slabs that have been found in the area, many too small to be cist slabs, but possibly included in graves as with Cairn Holy. Some are now missing but a number are found in a small collection in the grounds of Kirkdale House. Truckell argues that these stones exhibit a particular richness in comparison to some other areas.

Although having sympathy with Truckell's wish to identify different groupings of stones in various areas, see my comments previously on Christison's and Cowley's papers. In Truckell's case it is a visual feeling, and no other criteria are really given.

Certainly this area of Galloway has contained some fine stones, such as the central stone in the shelter of Kirkdale House, which Morris (1979, 111) claims,

"--- seems to combine nearly all the motives found commonly in the British Isles except the lozenge and the spiral. It is good that it is in protective custody under cover."

This stone is one that Breuil (1934) focussed on when searching for evidence of 'occuli' forms among the British engravings; I will discuss it later. (fig.C3). We may compare another small stone from this area, that is the slab from Kirkglaugh previously built into a stable wall, but now missing (Morris 1979, 119). It exists now only as a rubbing, but it had a very rich group of forms well within the Cup and Ring vocabulary, either an 'organic' type of form or even perhaps 'anthromorphic'. Nevertheless to group it with the previous stone as being distinct from other areas, is I feel very difficult.

Another mobile stone of considerable interest, now in Kirkcudbright Museum; was discovered and recorded by Flett (1926). As with a number of other small rocks it had been squared up and grooved. The forms are typical Cup and Ring symbols, but the significance and interest of the stone comes from the 'tight' composition of the forms, touching and apparently in places overlapping, or superimposed (Morris 1979, 59). In many rock art areas superimposition is a common occurrence; in Val Caminica it has been one of the means by which a precise chronology has been built up. Unfortunately it tends to be absent in the British Isles with the Cup and Ring symbols, although a few examples can be found in Megalithic art such as at Knowth (Eogan 1986, 117), on the kerbstone 73, site 1. However in the case of the Cup and Rings one day it may be clear that this absense of superimposition

is due to a specific function or functions of the symbols, in their British Isles context.

Probably enough has been sampled from the papers on the smaller stones and cist slabs to indicate the great richness and variety of forms; but I am tempted to relate one more paper before coming to what I will call the summarising paper of Simpson and Thawley (1972), and that is one by Childe (1941-2).

It is interesting that Childe's wide ranging interests should also include the focussing down on one or two carved stones. In this paper he described a lintel stone with Cup and Groove designs, or as he writes serpent like figures. This was found in an Earth House, Bairns of Airlie, (Jervise 1864). If we compare the carving with those at Lordenshaws (fig.E2 and 7), it is like a micro - macro situation. At Lordenshaws one finds the group of cupules at the top of the rocks and long grooves running away down, at times thirty feet or more in length. Again Lake Coomasaharn, Kerry has a rock with scattered Cups and Rings at the top, and then grooves running away down the rock (fig.H4), the design takes on a plantlike or organic form. Haddingham (1974) makes the same comparison in his book which I will look at later in this chapter.

Simpson and Thawley's (1972) work "Single Grave Art in Britain," takes an overview of much of the material that I have been sampling, that is the cist or urn covers and grave slabs. A great deal of the corpus of carvings that they work from is taken from

J.Y. Simpson (1865), but they also use more recent finds, 55 sites in total.

The authors take these mobile slabs as a separate body of finds in the British Isles, and analyse them as such. They date the stones to the period 2000-1400 bc, but since little of the material is precisely dated this must be approximate. Their work is based on 57 stones from 55 sites. That is 27 definite slabs or caps from cists, 15 loose in mounds, and 3 urn covers. 12 probable cist slabs.

Any approach to typologies or categories must involve subjective decisions; this is true of Simpson and Thawley's work. Their corpus of finds is not large, thus a variation in selection could make a great difference to their conclusions. Looking at the 12 unconfirmed but probable cist slabs, these may or may not be correctly included; but omitted are a number of small portable stones which they must have decided against. For example the stone in the Kirkcudbright museum from Blackmyre (Morris 1979, 59) or the stone from Barholm (Morris 1979, 56), but there are more that could be suggested and they are not recent finds. Presumably these have been excluded deliberately.

Simpson and Thawley identify 14 symbols; they exclude symbols that appear on only one stone, which seems a rather arbitrary decision, since it means the exclusion of an important triangular pecked symbol which is common to Passage Graves and appears with Cup and Rings and other forms on a rock slab from Carnwath Lanarkshire.

The symbols that they select are grouped into four.

- 1/ The Cup and Rings, natural rock symbols (Galician style).
- 2/ The curvilinear or Passage Grave forms.
- 3/ The geometric.
- 4/ The naturalistic.

It is difficult to establish the criteria which were used to distinguish between the Cup and Ring or Galician, and the Curvilinear Passage grave groups. It may be that certain stones could fall within different groups than those assigned by Simpson and Thawley.

Association between groups is tested by a simple opposing grid. They find some overlap between the Cup and Rings and the Passage Grave forms, and they claim that the Cup and Rings do stand out as a separate group, but the geometric and naturalistic do not.

Although these groups can be seen in relation to the cists they were associated with, no one group can be dated earlier than any other group.

If we look at distribution. 15 of the Cup and Ring have an Eastern distribution towards Northumberland. The cists are all in areas where there is plenty of natural rock carving, but the writers state that few are found in the rich petroglyph areas of the Tay or Kilmartin Argyll. A rich area for rock engraving is Galloway and Wigtownshire, but the authors note only one slab. They exclude the slab from Cairn Holy; and if we look back at Truckell's (1961-2) work,



which admittedly I was rather critical of, he claims that there are a distinct group of slab carvings from that area 9 in all. Simpson and Thawley claim;

"It is also difficult to equate the distribution of rock art with any category of artifact or site " (1972,86).

This I find a rather sweeping statement. Obviously it will depend on one's definition of spatial association; and the relative distribution in the Kilmartin or Kirkcudbright areas will demonstrate the possibilities (see maps in the folder).

In spite of these criticisms the authors do put their finger on an all important point. Since the decoration is usually haphazard and trimmed at the edges, it would seem that the slabs were often trimmed to fit; this is also supported in cases where the slab decoration has been protected from the elements whilst in the cist or grave, but nevertheless shows signs of erosion. This as stated before obviously has implications for dating. A further point of interest is as Simpson and Thawley state, the Cup and Ring decoration on the small slabs is far less rich than on the natural rock surface. Yet due to scale this would be expected if the slab pieces were broken from the less robust examples of the natural rock carving. This of course is not so easy to sustain in the cases of geometric or naturalistic forms, since these seldom appear on the natural rocks. However some of these geometric or naturalistic slabs do seem to exhibit a possible completeness of composition or grouping, such as the Badden slab,

already referred to (Campbell, Scott, and Piggott 1961-2). Therefore although these slabs appear to have a unity of use by being placed in cists or graves, they may have very different cultural origins.

The writers point out the lack of correspondence between the situation of the Passage Grave type cist slabs, with their bias to the East in England and Scotland, and Passage Grave decoration itself. However they claim that if one examines finds of other mobile objects which have Passage Grave decoration on them, such as carved balls, chalk plaques, antler hammers, Folkton chalk drums,, Rinyo Clacton pottery, then a bridge between East and West may be seen. This may still seem to leave much unanswered regarding the distribution of the slabs, but it is important to have the issue presented. It is a useful suggestion to look beyond the carvings themselves to other artifacts, and something that I will follow to some degree in my 'Structural Analysis'.

This paper seems an important one to have been written since the cist slabs can be seen as a separate category, displaying a mixing and meeting point for different styles of carving. Mainly due to the questions I have raised about distinguishing the difference between Passage Grave and Cup and Ring styles, and the way in which the corpus was composed, I am a little sceptical of the conclusions. Nevertheless I will return to this paper later when discussing chronology.

More Recent 'Classics' or Major Works.

Even if my title of 'more recent classics' is a little glib, the first of these will be Breuil's Presidential address of 1934 to the Prehistoric Society; quite a lot of the paper is based on a previous paper of 1921 which looked specifically at the chronology of the carvings in Ireland.

Both of Breuil's papers were written before the radiocarbon dating of Newgrange was available; also much of his focus is on the Passage Grave Art as opposed to the natural rock carvings, and it is only in the second paper that the natural rock carvings appear as a secondary issue.

Armed with our knowledge of the Newgrange dates we may well feel a little sceptical when Breuil looks at the straight line lozenge patterns on the kerb stones of Newgrange and puts them at the dawn of the Bronze age, that is contemporary with jet beads, funerary vases, daggers and lunulae. He offers chronological stages for Megalithic Art. The earliest, the thin incised lines such as are found on the Standing stone of Bollyderagh and other Dolmens, and also found on the tumulus of Newgrange and Dowth, but carved before erection. Second comes Loughcrew, thin lines again carved before erection. Third are the wide deep lines abraded, careful and complicated; only found at Newgrange with high relief curvilinear patterns. Latest are the straight line geometric patterns, and this is decided for Breuil by

one or two cases of superimposition, or 'cramping', due to other symbols which are already present prior to the carving.

The difficulty of superimposition is that one has no idea of the time interval involved, it could be a day, a few hundred years, or indeed an immediate change, mistake or correction. Certainly if there are many superimpositions of one style over another, then a change of style over a period seems convincing, as is found in some areas such as Val Camonica in Italy; and if as is the case there one can identify and date some actual figurative objects included in a style layer, then sequential chronology can be developed. I will return to this under Chronology, but for the moment I do feel this is not the case with Breuil's use of superimposition at Newgrange.

Recent radiocarbon dating does seem to confirm an earlier date for the construction of the Newgrange tomb (O'Kelly 1982, 230), also Loughcrew is seen as later (Herrity 1974, 41). Looking at Newgrange, the gaps of the roof were caulked with a mixture of burnt soil and sea sand, from this two radiocarbon dates were obtained centring on 2475 $\pm$ 45 bc. If as stated by O'Kelly (1982) R.M. Clark's calibration table for correction is used, the construction of the tomb goes back to 3200BC. Eogan (1986, 176) found rather similar dating for Knowth 1. Charcoal from the mound gave a radiocarbon date of 2455 $\pm$ 35 bc. Charcoal from a spread on the old ground surface which was considered contemporary gave a date of 2540 $\pm$ 60 bc. Eogan however claims that much of the Passage grave art was executed before construction. It will be necessary to return to these points in the chapter on

chronology.

The second thrust of Breuil in his paper of 1934 is to emphasise his views of anthropomorphic elements in the designs, and especially the 'occuli' theory. It is Breuil who first generates the idea of 'occuli' to account for the Cup and Rings, a view which a number of others have considered or adopted. The theory was written up in detail by Crawford (1957), but is referred to by Haddingham (1974, 34) and Beckensall (1983, 33).

Breuil analyses various stones from an anthropomorphic or 'occuli' point of view. the theory puts forward what is a migration or culture spread of religious beliefs and symbols, stemming from the Earth Goddess of the Middle East, and spreading via the Mediterranean to Spain. The image is seen as becoming 'abstracted' on the way to only eyes or occuli, such as appear on the small mobile schist slabs of Iberia (fig. P2 and 3). The forms are then seen to have spread to the British Isles, and W. Europe, appearing in Passage Grave Art as well as on the natural rock.

The Cardroness stone (Morris 1979, 111) (fig. C3), is examined by Breuil for his occuli theory, as are stones from the Loughcrew Passage Graves (fig. K8 and 9), and the natural rock sites at Stronach Ridge (Morris 1981, 20), plus other Scottish sites. Cup and Rings with tails become for Breuil male figures, and the linking grooves between figures indicate relations between a family tree. The almost infinite

number of forms that can be accounted for as 'occuli' test one's credulity. However it must be admitted that when one sees the huge variation of forms which relate to 'cornu' in the Mt. Bego area of France, one might become a little less sceptical (fig.L4).

As Crawford shows , by its many connecting links this theory of the Earth Goddess or 'Occuli' does have more conviction than many imaginary explanations; but it is doubtful if it can be proved or disproved. The theory is given a careful critical analysis by Fleming (1969,247-261); his basic conclusion is that the Mother Goddess cult was only associated with the areas of Malta, Sardinia, and the Marne in France, that is the rock cut tombs, and it was too late to influence the Megalithic builders;

"But I hope that I have shown that firm evidence for a mother goddess is confined in Europe to the province Malta-Sardinia-France " (1969,255).

Although I may sound sceptical of some aspects of Breuil's work, his paper does have a confident rigour and is based on a sound observation of a wide range of material, even including 'anthropomorphic cup and rings' from Fort Lamy, French Sahara. He does set the framework for later works, which become concerned with questions of the relation between Passage grave Art and the Cup and Ring carvings on natural rock, and also comparative origins and relationships between regions and countries.

These themes are picked up by MacWhite (1946), and I feel clarified to some extent, even though we may not wish to accept all his conclusions.

MacWhite makes a clear distinction between the Passage grave Art and the natural rock carvings, these he calls the Galician style, but equating to what I have been calling the Cup and Rings. He assumes that they originated in Spain, which in turn had been influenced by Middle East sources. He finds the Anthropological ideas of Breuil quite convincing, but questions his chronological sequence, and advises prudence until scientific dating is available; thus MacWhite is also prior to the Newgrange dates.

Looking at Passage Grave Art MacWhite finds evidence for obvious Iberian origins from the carvings of that region, whether on natural rock, or megaliths, or from rock painting; however since the spiral is common to many Irish Passage graves but seldom appears in Iberia, it needs a special ad hoc treatment; therefore Mac White suggests influences from Malta or N. Africa.

Here I will pause a moment to express some doubt. Although the interchange and spread of ideas is an obvious human activity, it does seem to become a taken for granted premise in much thought. I suggest that it is also quite possible for forms to emerge indigenously within a culture, either stimulated by natural forms in the environment, or perhaps 'after images' drug induced or otherwise (Oyster 1970). When travelling in the Vaupes region of Colombia, the river was constantly

swirling in never ending spirals, and the spiral was a very common form in the rock art (fig.L10); to me it would seem to be rather far fetched to account for this use of the form by tenuous cultural links through dense jungle, unless of course additional evidence was available.

Looking at the Cup and Ring carvings on the natural rock in the British Isles, MacWhite sees them as mainly inspired by the Galician group of carvings on natural rock and not by the Passage Grave Art. Following from the similarities between the the S.W.Kerry carvings and those in Wigtown and Kirkudbright, he suspects a progression via Ireland from Galicia.

MacWhite admits that the cist covers do show a wide range of symbols, mixing Passage Grave styles with Cup and Ring, as we saw with Simpson and Thawley; but he makes no attempt to deal with this enigma. Although MacWhite does begin to clarify areas and groups of symbols, once we have the early date for Newgrange and Knowth and the examples of Cup and Ring symbols in them, it becomes far less easy to put forward the culture spread theories, and to uphold MacWhite's confident and limiting dating of the Cup and Ring engravings to 'Food Vessel culture', to quote,

"In a number of cases where decorated stones form the covers of burial cists they cover food vessel burials, and from this Childe and Hawkes have rightly counted 'cup and ring' carvings an element of the North British Food vessel culture " (MacWhite 1946, 68-9).



However MacWhite's paper is important, and raises vital questions regarding chronology, it will be necessary therefore to reassess and return to his work in a later chapter.

I mentioned earlier in this chapter Prof. Anati's paper (1963-4) on the then newly discovered petroglyphs at Derrynablaha (fig.H1,3,6-9). It is an example of good recording and description of what is one of the most interesting sites in Ireland. The 15 stones exhibit a wide range of grouping and design, but use symbols that relate very closely to other sites in England and Scotland. Anati gives us a distribution and quantity graph for the 16 symbols that he identifies, a useful simple statement which could prove interesting if carried out on a larger scale. As we shall see Morris (1979,1981) does map the density of the various symbols for the areas he deals with, but figures are not given or association frequency. One should bear in mind however that although this form of analysis is interesting, as Binford said after a years computer work on the distribution of bones and artifacts.

"--- by generating more and more facts and by detecting more and more patterns. I had simply increased the scope of the problem without reaching any solutions " (1983,100).

After his recording Anati looks at the question of chronology, and the origins of the Irish petroglyphs. Here it is worth remembering that Anati as with Breuil before him, has devoted most of his working life to the study of Rock Art, especially petroglyphs; but again I do

have reservations when he finds superimpositions and assumes that there is a notable time lag between some carvings. He suggests that the Derrynablaha carvings were carried out over a long period.

Although of course there is no absolute dating, Anati finds associations with Menhirs and Standing Stones, which he claims have long been associated with the Bronze Age (Macalister, Armstrong, and Praeger 1912-13, 351); thus he assumes the Bronze Age for the carvings. This of course is not an uncommon assumption for the Cup and Ring carvings, but it is one that should be questioned, as I will do later. Standing Stones are not restricted to the Bronze Age.

Anati looks at possible influences on the Derrynablaha stones. He claims that all the symbols found at Derrynablaha do occur at times in Passage Grave art, but he states that it is important to look at frequency and quantity. It then becomes obvious that Passage Grave symbols are not abundant.

"The problem seems to be rather of a quantitative character since figurative elements very abundant in the petroglyphs are rare in the Megaliths, while common elements in Megalithic Art are rare or absent in the petroglyphs " (Anati 1963, 14).

Thus as MacWhite and others have said, two separate groups can be defined with some overlapping, but to me this overlapping is quite minimal.

Anati continues, "It is likely that these petroglyphs started before Food Vessel culture, and persisted thereafter. The people of the cist graves were just one of several human groups that had adopted these figures, --- and probably also the ideology connected with them, whatever this may have been" (Anati 1963, 15).

He goes on to claim that from these connections a continuity existed in the British Isles, from a Passage Grave derivation; but with indirect derivation from Megalithic invaders upon a local population who interpreted and accepted the ideology in their own way, and 'emphasising motives that appealed'. The term 'Megalithic invaders' is discussed below.

Anati does not follow MacWhite's Iberian origins; but admits a likely connection parallel evolution, which can allow for strong differences as well as similarities.

"The main common denominator of these two art groups is that they evolved a similar figurative approach, both developing a similar (but not identical)) pattern out of similar (but not identical) repertoires of ideas and symbols of local Megalithic Art" (1963, 15).

Thus for Anati it was the 'Megalithic Invaders' that gave the initial ideas for both developments, Passage Grave Art and the Natural Rock petroglyphs.

The concept of 'Megalithic invaders' I find unacceptable; a little earlier I referred to Fleming's work which rejects the theme. The idea of parallel evolution with connections or contact may be more useful, but this would require careful consideration of the appropriate dates for the megaliths, and lead in directions away from the thesis.

My main comment would be that here as with MacWhite and others the similarity between Passage Grave Art and the Cup and Rings on the natural rock is over emphasised. The basic similarity is that they both appear to be nonfigurative, but the actual vocabulary of forms are different, with only a minimum of overlap; such as a very rare spiral on some natural rocks, and an occasional rectangular shape, and a few examples of the cup and concentric circles and other circle shapes in the Passage Graves; excluding of course the inevitable common cup marks in both.

Anati's comments came before the radiocarbon dating of Newgrange, nevertheless his basic premise can be upheld from recent dating; see Shee Twohig (1981, 55, 105) for comparison.

I have expressed doubts on the value of developing ever more complex correlation minutia; one paper which has attempted to computerise and compare a corpus of the British Isles sites is that of Walker (1970). However he looks at Prehistoric rock carvings in general and includes Passage Grave Art, Cup and Rings on cists, in barrows or Stone Circles, but only a selection of Cup and Ring on the

natural rock. Since in his list of 457 sites he only includes carving on stones that are on, in, or associated with another archaeological situation, his definition of such an association is not quite clear to me. He admits that to deal with the over 2000 sites of the isolated mainly Cup and Rings on natural rock in the British Isles would be difficult. In total Walker deals with 1122 stones. Five aspects are recorded for each site: type of monument with which associated, presumed period, artifacts found, distance from a navigable waterway, types of carving.

I have doubts about Walker's mixing of the different types of engraving, natural rock, Passage Grave, cists, etc. The findings seem to border on truisms or at least are rather slight; for example,

"This seems to confirm the view already proposed that there are three main types of prehistoric rock art in Britain, megalithic funerary art, cup and ring, barrow cist art " (Walker 1970, 32). or

"--- the juxtaposition of different members of classes 3, 4, 5, 6, is far less common among several thousand decorated boulders and rock surfaces, than among the few score decorated tombs" (Walker 1970, 32).

The conclusions to Walker's paper seem equally general; however if one role of statistical computerised work is to confirm or reject what might be called 'common sense' knowledge in a field, then this study does that. Walker concludes by defining and describing the

three distinct groups of British Carvings, megalithic, cist covers, natural rock. Of interest is one of his last findings, that the natural rock engravings are much farther inland than the other groups. This leads him on to his paper of 1977.

To the best of my knowledge Walker is one of the first to use computerised statistical approaches to the Rock Art of the British Isles; but also his work, especially his contribution to Ucko's book of 1977, does show a new approach to the use of the material. He focusses on the Cup and Ring petroglyphs of N.W. Spain and those of Central and N.E. England. He uses the engravings as archaeological finds, and shunning any concern about meaning or explanation, explores their spatial relation to other finds, Neolithic or Bronze Age. He hypothesises a Neolithic origin for the Cup and Rings; ecological factors are also noted and taken in to account. From the meaningful correlations between petroglyphs, polished stone axe finds, and ecological factors, predictions are made for probable sites for new finds; this does lead to the discovery of new carved stones.

Walker claims that in the Mid-Pennines, carvings do not occur in the clay valley soils, but are found at higher levels, 120-250m in the East, or 180-300m further West. In the well drained sandy soil of the Tay valley, they do occur, likewise in Galicia where they occur close to the Marine washing limits as well as high up. From this Walker infers,

"These differences suggest ecological characteristics such that altitudinal distributions of carvings reflect those of occupants, rather than that the carved sites are somehow set apart from geographical areas used by domestic or exploitation activities" (Walker 1977, 464).

Therefore in the Mid-Pennine zone, "---altitudinal distributions of carvings correspond closely to present day heather moor, avoiding advanced degradation to cotton sedges and spagnum bog" (Walker 1977, 465).

This bog was present as early as 1500BC in many areas; Walker refers us to Switzer and West (1973).

Using these ecological assumptions, Walker looks at the Stone Axe distribution to the South of the W. Yorkshire carvings, where no carvings had been recorded. He decided that the flanking moors of N. Derbyshire around the Derwent valley with their wide heather covered benches seemed likely candidates for carvings, and new rocks with carvings were found.

From the occupational and exploitational guidelines of the correlation of finds and ecological factors, Walker is able to make some discussion of the wider behaviour patterns in the late Neolithic period, such as,

"In short the two regions show only slight cultural exchange, exploitation rather than trade probably explains carved rock locations in W. Yorks," (Walker 1977, 466)

Walker states in his conclusion,

"Ecological approaches to rock art make possible use of the art objects as archaeological markers, and allow working hypothesis to be formulated capable of receiving support from predictive researchers" (Walker 1977, 468).

Thus it would appear that this work attempts to fit a basic hypo-deductive scientific model of setting up a hypothesis and then testing it by prediction. How rigorous the testing is from the finding of the new stones can be questioned. I am also always a little worried by the inclusion of stones with cup marks only in the finds, for reasons already given. Nevertheless I think one can applaud an approach which integrates Rock Art into the total archaeological investigations; and the rather narrow and extremely difficult aim of meaning, is subsumed; as Walker says,

"Rock Art students, dominated by paradigms of investigation drawn from comparative ethnography or from art history-fine art analysis may find the approaches simplistic; but their justification is no more than their usefulness to archaeological reconstruction of social patterns" (Walker 1977, 468).



Following from this Walker looks at distribution patterns and ecological factors for the Neolithic and Bronze Age, and hypothesises some exploitation patterns and movements in relation to the changing terrain.

I will not discuss these hypothesis, but when moving to discuss trade routes and links, Walker seems to digress from his previous generalised findings and frameworks, and falls into the common weakness, of building extensions or ad hoc additions to his hypothesis from solitary examples of similar or apparently connected forms. Examples which he uses are; a curvilinea zoomorph form from W. Scotland mentioned by Childe (1940), cross and circle motives at Duncroisk, Tay (Cormack 1949-50), or labyrinths from Cornwall and Galicia (Walker 1970) - (These Cornish labyrinths are generally agreed to be Christian, see Haddingham 1974, 99).

This I feel may weaken a little what is in Walker's work the potential for an important framework for the use of Rock Art, and in this case the Cup and Ring symbols.

There have been only a few actual books published on the British Rock engravings. Indeed compared to the relative wealth of material on cave or rock paintings, there has been little produced on world petroglyphs or engravings: possibly it is due to the often but by no means always, less figurative and enigmatic symbols. Evan Haddingham's book "Ancient Carvings in Britain" is one of the few. It was published in 1974, and it was in time to include some of the

radiocarbon dates for Newgrange, but apparently not for Knowth. Presumably aimed at the layman and the academic, it maintains a good level of rigour and discussion. it is not a large book and is divided into three sections. First the Passage Grave Art, second the Cup and Rings or carvings on natural rock, and lastly a residual part dealing with some figurative and early christian symbols.

It is the second part that is most relevant to this thesis, and it is doubtful if it is much longer than the average paper , since it is well illustrated. In this short work Haddingham manages to raise, and in an adequate if not a deep way to discuss, most of the past and recent questions related to the Cup and Ring symbols, and their association with Passage Grave Art. Thus the work in no way aims to increase the corpus of sites or add new descriptions, but to raise and discuss wider issues.

Some questions concerning the Cup and Ring carvings can only be discussed profitably at the moment in relation to Passage Grave Art. This was seen earlier in the work of MacWhite, or Simpson and Thawley, and to some extent with Breuil. Since we do have radiocarbon dates for the Boyne tombs and there is some overlap of symbols with the Cup and Ring carvings, the relationship between the two becomes important. This is so from a chronological viewpoint and a cultural analysis: were they the products of two or more different cultures, or sub-cultures, or sub-sets within one culture, or perhaps are they after all of a common ancestry and ideology? These are difficult questions and in our present state of knowledge they are unanswerable.

Hadingham says,

"If there is a possibility that the Cup and Ring rocks and the Passage Grave stones are roughly contemporary perhaps carved over a period of centuries during the third millennium, then the basic differences between the styles becomes all the more intriguing " (Hadingham 1974, 73).

However once one tries to hypothesise forms of influence and development it is easy to contradict oneself; perhaps Hadingham comes close to this .

Talking of the hidden corbel covered by the third roof slab of the passage in Newgrange with Cup and Ring symbols on it, he states,

"We can argue then that in 2500 BC the carver of the Newgrange corbel was invoking an already established Cup and Ring tradition, which for some reason was considered inappropriate or distinct from the main ornament of the tomb" (Hadingham 1974, 73).

It is important to note that this should read 2500bc, that is uncalibrated. Hadingham does state at the beginning of his book that all dates are uncalibrated.

Further on Hadingham says,

"It is easy to imagine the S.W.Scottish coastal region as a key area where impulses from Ireland were transformed into a vigorous and independant tradition of Cup and Ring carving "  
(Hadingham 1974, 73).

This may or may not be a contradiction, but if not Hadingham is suggesting a very early pre-Passage Grave origin for the Cup and Rings on the Natural rock in Ireland, which influenced Newgrange and the natural rock development in S.W.Scotland. This is not to denigrate the work at all, since these key complicated issues are raised, illustrated, and discussed.

The cist covers which as we have seen include a mixture of styles, illustrate for Hadingham a breaking down of the distinction between the two styles of symbols during the Bronze Age. It is an interesting idea.

"Many of these cist stones as we have seen are probably re-used from an earlier period. A small number also present a mixture of Cup and Ring and Passage Grave art styles, which might be thought to date from the Bronze Age when distinctions were breaking down "  
(Hadingham 1974, 74).

Thus we find that Hadingham as other more recent writers, feels his way back to a considerably earlier date than the Bronze Age for the origins and development of the Cup and Ring carvings. This would then have implications for the relationship that seems to exist

with the Galician carvings. MacWhite saw them as a primary influence; but if the date of the Irish is pushed back to the third millenium or even the fourth on corrected radiocarbon dates, then can we claim that the Galician were earlier still? The issues are quite complex.

Hadingham closes the chapter with a statement that makes it even more surprising that so little public interest has been focussed on the natural carvings of the British Isles the Cup and Rings, or the Passage Grave Art.

"The most essential and exciting point is the growing evidence that the lozenges, spirals, cups and circles, of Britain may represent the first major European Art tradition in stone since the Ice Age" (1974, 74.).

A final point I will note from Hadingham relates to the concern I mentioned when looking at the Truckell and Christison papers. That is the need to move beyond the general term of Cup and Ring, and attempt to analyse any existence of groupings, similar symbols, or areas of distinction. Hadingham emphasises these great differences between the symbols and forms on various rocks in different areas, by the use of excellent photographs. An example is Kilmichael Glassary (already mentioned by Christison) (fig.B5-7) with its multitude of small keyhole and distorted cup forms, and Torbhlaren a mile away, having groups of cups and rings.

Haddingham also mentions the variation on Ilkley Moor, between quite close stones (fig. K6 and 7); this can be seen in Romilly Allen's work and in E. T. Cowling both of which we have looked at. As stated Haddingham gives many examples of variation, but he also gives examples of similarity in form, often at a considerable distance apart. He makes the comparison between the carvings at Lake Coomasaharn (G1, H4) and those at Lordenshaws in Northumberland (fig. E2 and 7), which I described when talking of Childe's paper earlier.

There is a tendency to group carvings according to areas or spatial proximity; but if typologies or groupings of differing symbols were distinguished, one might have to start thinking of different 'subcultures', or the changing uses of different combinations of symbols over a period of time. Then it is possible that a rich area in petroglyphs such as Kilmartin or Northumberland, might contain samples of different 'subcultures', possibly engraved at different periods.

For example in areas where petroglyphs are very rich, such as Kilmartin, or Northumberland, there could well be examples of different types, depending on how the typology was characterised. This might indicate first, differing symbolic statements for one cultural group, or second, the existence of various smaller groups using common symbols in a different way, or third, it might indicate the changing use of symbols over time by one or more cultural groups. I will return to the question at the end of the last chapter.

I will now move to the all important work of R.W.B. Morris who has probably done more than anyone else to further the study of the Cup and Ring carvings on the natural rock in the British Isles. It is impossible to cover his work completely without considerable length. He has written seven full published papers, published in the 1960's and the early 1970's, as well as three books (1977, 1979, 1981) on the subject. One book covers Argyll, a second Galloway, and the third Southern Scotland. It would be good to think that another might be coming perhaps on the Tay, but Morris is now in his 80's.

Morris's great work has been the gathering of a corpus of Cup and Ring carvings which exist or have existed in the past on the natural rocks; also including the minority of small mobile rocks often associated with cists or graves. Morris for reasons that I have mentioned previously felt it necessary to exclude rocks with only Cup marks from his books although they are listed in some of his papers.

Morris's summary of sites is difficult to fault, and invariably photographs and diagrams are included. The photographs are usually extremely good, maximising even the faintest of images by using horizontal light or wetting the marks; some people do feel that wetting the rocks can lead to a distortion. Six figure map references are given and the height above sea level, followed by directions to find the site, and a detailed description of the symbols, with the slope of the rock when appropriate. We are also given a complete bibliography for each site. From this thorough approach Morris is able

to include carvings now lost or destroyed, often with sketches from previous authors or Royal Commission rubbings.

If this corpus of sites was Morris's only work it would be impressive, but he has gone farther and attempted to summarise some of his findings. These mainly take the form of distribution maps in each of his three books. They cover the situation of the carvings, that is a movable slab, or a large boulder etc.; the type of carving, such as the distribution of the various symbols; the angle and orientation of the rocks, and variation in the number of rings. The number of maps varies in the three books between 19, 28, and 20. In his last book on Southern Scotland, he ends with a collation of these findings from the three books. Morris lists 1967 rock carvings in the books, all of these are more complex, he claims, than the simple Cup marks or 'dumb bells' (cups conjoined or joined by a groove) from 270 sites. As a point of interest he claims that there are at least twice as many other sites where only Cup marks or dumb bells are found (Morris 1981, 165).

The number of diagrams for his final collation is limited to nine (1981, 166-70). These are comparative occurrence diagrams covering the areas of Galloway, Argyll, and East, West, and Southern Scotland.

In this way Morris does move towards analysing the possibility of differences in the use of symbols, and their presence and combinations in different areas, always excluding of course the rich areas of Northumberland, the Pennines and Yorkshire.



Although this work moves in a useful direction, my one criticism is that the map diagrams for Argyll and Galloway (Morris 1977, 17-26 and 1979, 31-44) tend to be on too small a scale to register visually with any ease, and we are given no statistics. The collating diagrams for the three areas (Morris 1981, 166-70) are more easily digested.

I will give a brief summary of these findings since they are of relevance to later discussions.

From his analysis of the symbols Morris claims no startling discoveries in distribution or occurrence. An example will give the flavour. On the keyhole type symbol he claims,

"This pattern is quite uncommon. It seems to have been evolved by carving two or sometimes three or four parallel grooves from near the centre. In most cases the rings are gapped, but this is not always so. In the whole of South Scotland there are about 94 of these 'keyhole' types, as against about 350 carvings having the more normal radial groove" (1981, 172).

The findings are quite general, and clearly more precise and complex statistics would be necessary in order to decide whether meaningful patterns might emerge.

Morris notes that only one in eight of the carved surfaces slope at an angle of over 20 degrees. Many are nearly horizontal. He

suggests this is a noteworthy fact, since carvings sloping at over 50 degrees are common in other countries. This of course is a case of surmising, and figures are clearly necessary to make a meaningful statement. I have experienced the sites of Val Camonica in Italy and Yagour plateau in Morocco, both of which have a large percentage of horizontal sites; one can find many sites in Canada and the U.S.A. where petroglyphs are mainly on cliffs or canyon walls and thus vertical, such as the West Coast of British Columbia, or perhaps the Lava Bed petroglyphs in North California; other sites are mixed such as the carvings on the Vaupes in Colombia (Jackson 1982,83).

Looking at altitude, since two very rich areas Kilmartin and Kirkudbright are very low lying this brings down the average height to less than 330 feet (100m); but away from these areas the tendency is towards 330-660 feet (1-200m) above sea level; above this is the cut off point, perhaps due to the more barren land.

A noticeable point is that there are few complex sites with many symbols, excluding perhaps Achnabreck (fig.A1,2, 4,5,7-10), Drumtroddan (Morris 1979,93) and the Concho stone (Morris 1981,124), compared to some sites in other countries, such as many stones at Val Camonica, Italy (fig.L5).

Morris looks at the comparative quantities of the different symbols on the cist slabs, noting that almost all the slabs had the carving facing inwards, the results are again shown diagrammatically. Then the great preference for carving on the natural rock, fixed or

'living' is noted, and this leads Morris to what I feel is his personal interest or even 'bias', since he states it in all his books as being important. That is the question of the relation of the carvings to mineral resources.

In his book on Galloway Morris takes 104 possible explanations for the functions of his carvings. He examines each briefly giving it marks out of ten for preference or conviction! Not exactly a highly scientific approach, but perhaps as good a way as any to 'survey the field' in our present state of knowledge. He does make an important point.

"Many, indeed most of the theories listed below are still strongly held and believed in by at least one archaeologist of note, amateur or professional. Almost certainly more than one of the theories is correct" (Morris 1979,15).

Within this list of 104 possibilities No 6 is 'Early Prospectors'. marks made in the search for copper or gold. Morris gives this eight out of ten, a high mark!

There is some justification for this idea in Southern Scotland. We are given a full page map with circles at 10km radius around sources of copper and gold ore. Almost all the carvings fall within these circles except for those just north of the Clyde; but even here apparently a prospector might expect to find ore since it is an area of volcanic plugs which are usually rich in minerals. Morris claims

that The idea holds up quite well in other parts of Scotland (Morris 1979, 44 and 1977, 14).

However at its best the idea can only be a correlation. Walker (1977, 466) states that lead and copper ore are found in the Pennines, but seems sceptical of Morris's idea, since he claims that this correlation is not a constant feature. Metal ores are not usually easily accessible at inland sites of Cup and Rings, such as Perthshire, W. Yorks, N. Derbyshire, and the hills between the Cheviots and the coast in Northumberland. Walker's (1977, 459) suggestion, and supported by some of his mapping, is that in the above areas occupation was preferred on the land between low lying areas and the high mountain habitats. In such areas as S.W. Ireland and S.W. and W. Scotland, he claims that this middle height land was not available for settlement therefore the low marine benches were used. He suggests that in these areas the terrain changes from the low land to the high mountains suddenly. This does not seem to be born out by the maps. Land of varying heights from 50-150m is available in all areas; and petroglyphs to the east of Kirkudbright are at heights of 50-150m, and in SW Ireland, sites such as Coomasaharn and Derrynablaha, are both just above 500 feet. It is true that many of the Central Pennine sites are at higher levels, but again it is not so for the Northumberland area around Wooler. It does not seem to me that height alone was the determinant for occupation, more important may have been the availability of land fit for cultivation, plus trading opportunity, or other attractions; few people live in total isolation.

Morris closes his third book by saying that even if we accept this connection with prospecting,

" I still suggest completely without proof, that this 'use' was only one of several 'purposes' for which the cup and ring symbol was used. that it is a very ancient symbol, perhaps existing long before the so called 'Boyne' motifs of rings and spirals were invented" (Morris 1981, 176).

Here we have echoes of Hadingham's ideas, or more likely vice versa!

Finally as with many of his forbears writing on the topic, Morris allows himself a flight of fancy, but much more modest than many of theirs, and well earned.

"And again I seek without a shred of evidence in Great Britain beyond the " circumstantial evidence" of our inward-facing cist slabs- did the ring, and the cup and ring and the spiral have the same religious meaning as some of our continental archaeological contemporaries suggest - the sun or sun god" (Morris 1981, 176)?

I have not dealt with Morris's papers which preceded the books; but much of the content of these papers reappears in the books. It is necessary to mention his work with a team of helpers in surveying the large Achnabreck site near Kilmartin that I have mentioned a number of times before (Morris 1970). This is probably the most thorough survey

of a site carried out in the British Isles, and echoed much of the methodology carried out at the Institute of Prehistory, at Val Camonica, N. Italy. I will deal with this in detail in a later chapter.

Morris's work covered the whole of Scotland up to the Tay. Until recently this still left the rich areas of Northumberland, Yorkshire, and Ireland without an updated corpus of sites. One of these gaps has been well filled recently by Stan Beckensall's (1983) "Northumberland Prehistoric Rock Carvings". Approximately 136 carvings are documented, plus some which are lost or in museums; map references and bibliography are included. Although the layout of the work may not be as simple and direct as Morris, there does tend to be a little more description of the sites, and all important a clear sketch map for each.

One feels an emphasis in Beckensall's work towards burial sites and stones associated with graves. This is clear when he talks of significance, he states,

"--- there are several deductions to be made from the evidence in Northumberland that:-

a) The rock carvings are basic symbols that are arranged in patterns.

b) These designs are sacred in that they are associated with early Bronze Age burial" (Beckensall 1983, 33).

In claiming that the symbols are arranged in patterns, Beckensall differs from many previous writers, and I have sympathy with the statement, as will be clear in my chapter on Structural Analysis. Perhaps 'pattern' indicates regularity and repeat, whereas arrangement or even composition could be more appropriate.

Beckensall (1983, 35) claims 43 sites have some association with burial, whether stone cists or a close proximity of the carvings to a burial mound. Although there is no guarantee of a temporal association from a spatial one without further evidence; 43 out of approximately 136 carvings is an interesting connection, and is probably more meaningful than in other areas of the British Isles.

Looking at association in more general terms however. Morris (1970-1) gives us a check for other finds within the vicinity of the large petroglyph site of Achnabreck. He gives 11 sites within 2000m including other carvings, standing stones, cists, hill forts, flint tool factories, and the copper workings 4 miles away. This brings me back to the point mentioned in the introduction. Does this show a meaningful relation to the engraving sites, or was this area simply a suitable place to occupy. One does not necessarily preclude the other. If the Cup and Rings existed and were used over a long period of time as seems quite possible, then they could be related to many of the other remains. The question of which has priority settlement or the siting of the engravings remains open, although as we have seen Walker seems to favour the choice of land for settlement as the main determinant. The availability of food and other resources, plus trading

possibilities must have been of great importance, yet it would I feel be crude to only admit a material determinism; the selection of sites specifically for carvings, especially major sites such as Achnabreck could well have been equally important. Therefore a compromise or blending between the material factors and ideas are the most likely determinants.

Beckensall allows himself one subjective journey into the world of explanation. He favours the possibility of the Earth Goddess or Fertility Goddess, which had first attracted his attention in Malta. This of course is not unrelated to Breuil's 'occuli' theories, and Crawford's (1957) book on the subject.

A final word on the Beckensall diagrams; they follow what has almost become a tradition in petroglyph reporting, the thick black line to indicate all the grooves and cups, varying at times in thickness. The considerable inaccuracy in using this method is indicated well in Beckensall's own book, where he places his drawings or diagrams opposite the precise drawings of Mr Bruce or even Mr Tate (Beckensall 1983, 62-63). It is a question I will look at much more fully under Methodology.

There are of course many other works which contribute to the subject of rock engravings directly or indirectly, but in this chapter I have made a personal selection, dealing mainly with work directly concerned with the Cup and Ring petroglyphs of the British Isles and to some extent Galicia. However there is one writer whose main concern



is not with rock art, but has made an important contribution to the field, and that is Prof. Thom (1966, 1968, 1969).

Thom's basic work was the explanation or analysis of astronomical relations of the stone circles or other standing stones; in the above papers he extended this work to look at the Cup and Rings. He worked mainly from wax rubbings and claimed that at least the non circular shapes followed the construction of the actual oval layout of the majority of the stone circles. According to Thom the spiral or concentric ovoid symbols which he examined were constructed with the use of pythagorean triangles; and following from his discovery of the Megalithic yard 2.27 feet, In his work on the circles, he found implicit in the construction of the carvings the Megalithic inch, a standard unit of 0.816 inches.

Since much of Thom's findings rely on his major theories, it is inappropriate to criticise here. Therefore I will limit myself to a few peripheral comments. Working from rubbings as opposed to more accurate tracings can lead to distortion, and Thom worked from rubbings; his ideas may appear to fit the smallish number of spiral symbols, and a few more precisely executed off circular oval Cup and Rings; but there are many forms within the Cup and Ring vocabulary executed far more freely and varied to which it would be difficult to apply his construction. Lastly if one is attempting to make an astronomical connection for the Cup and Rings as Thom has done with considerable conviction for the stone circles, then problems arise. Cup and Ring marks do appear on some stone circles such as Temple Wood

at Kilmartin (Morris 1977, 120), or the outlying boulder at the Monzie monument in Perthshire (Thom 1966, Haddingham 1974, 48). Childe (1952) even claims that they appear on the stones leading to Avebury, but I assume he means Cup marks alone; and there are many Cup marks in significant positions around the Clava tombs. Nevertheless on many of the major acknowledged astronomical sites, such as Bollochray or Callanish, the Cup and Ring symbols are absent. Even when they do appear on the standing stones it is never in the rich groupings which are found on the natural rock outcrops, but more as a reference point. Of course as stated by a number of writers, it is always possible for the carvings to have an astronomical reference which avoids the need for a direct figurative form, but then we are jumping into the area of unsupported imagination.

A short time before printing this thesis, the VI volume of The Royal Commission on the Ancient and Historical Monuments of Scotland, Argyll. An Inventory of the Ancient Monuments. (Mid-Argyll) was published. This gives a thorough and comprehensive survey of the Cup and Ring engravings for the Mid-Argyll area. Some new sites are recorded that do not appear in Morris. Although I have claimed that Morris's recording is good, the material in the work of the Royal Commission is of a higher standard. Unfortunately not all sites have photographs or drawn illustrations, but the photographs that appear are of a high standard, and appear to use a wide angled lense to give almost vertical views of large rocks. The drawings which I assume are from tracings, are accurately scaled and extremely clear, yet give some feeling of the rocks. There is often a lack of agreement between

Morris's findings and that of the Royal Commission. On the whole the Commission tends to find Cup and Ring symbols that Morris leaves out, but they have also included some very fine new rocks, such as at Glasvaar, where Morris gives one rock, but the Commission gives six, two of which are quite complex. At Achnabreck the Commission includes various symbols that Morris leaves out, notably some faint forms at the top north end of the rocks, which they suggest could be earlier engravings.

### Summary

Although I have discussed and analysed many of the works which I have referred to individually in some detail, and made relevant comparisons, it is useful to briefly summarise my feelings regarding the body of work and literature in total.

To quote or repeat an earlier statement of mine in this chapter.

'It could be argued that one of the earliest works on the engravings of the British Isles by Prof. J.Y. Simpson is as good as most that have followed.'

I would still support this statement although it might suggest that progress since had been little or severely limited, which is not the case.

Simpson gives a well documented corpus of sites in Scotland and England, with examples from other countries. He raises many of the issues that are still relevant today, and his broad generalisations on dating are not unacceptable.

I would suggest that although progress has not been mind shattering, quite a lot has been built on the foundations of the earlier writers.

First of course the development in accurate recording of sites has been great, especially in England and Scotland. I have drawn attention to the work of Morris and Beckensall and more recently that of John D. Hedges and the Ilkley Archaeological Group. Ireland still lags behind in the documenting of petroglyphs on the natural rock, but much work has been done by Elizabeth Shee Twohig and students, and new sites are constantly appearing, notably in Louth during the last few years. This of course changes distribution patterns considerably.

The discussion on the relation between the British Isles and Galician carvings has continued for some years, and perhaps has not progressed a great deal; except that the old migration assumptions of influence spreading from Spain towards the British Isles as Breuil and MacWhite held, can well be questioned after the accurate dating from Newgrange. Since chronology is a major hindrance to progress in our knowledge of the Cup and Ring carvings, the Newgrange dating is important, although it is necessary to give it some careful consideration, both on the question of the precise origin of the dated

material, and the context of the Cup and Ring marks found there. Just how much guidance we can take from a few fairly naive and tentative examples of Cup and Rings on the back of kerbstones or roof slabs is open to discussion, and I will undertake this later.

Since we are told this is the age of the computer, Walker's work has some importance in being alone to the best of my knowledge in using this technology. Unfortunately I found the results rather limited.

Many may be sceptical of the 'mathematical' or 'numerical' approach of the computer, and I have related Binford's (1983) view. Nevertheless if we realise the limitations, such work may give us leads to be verified in other ways. Walker himself went on to develop the use of these results in his later work when he used the Cup and Rings as 'finds' in relation to other 'finds' in a different theoretical approach, as we have seen.

Finally as I have mentioned more than once; a number of writers commencing with Christison (1903-4), indicate the differences of symbols between groups of forms, and of the symbols themselves between rocks which are often quite close together. This can raise many questions if these differences can be satisfactorily defined; possibly different subcultures, different periods, different functions, or many others. Frequently these differences are ignored, and all carvings are grouped under the general title of the Cup and Rings. One exception is

Morris who begins to look at the question, and his charts and diagrams have been mentioned.

Thus although no startling leaps have occurred, much steady ground work has accumulated, which has opened up many important issues and directions that might be pursued.

### Definitions of Art .

Before dealing with questions which arise from the general title 'Rock Art', under which umbrella this study falls, I wish to look at a topic which is an important area of debate in Archaeology, that is the use of analogy as a form or tool in an explanation. Since I shall inevitably be making reference to analogies in this chapter and later in the thesis as a whole, it would seem important to clarify my position at this early stage. Opinions on the issue would seem to vary as much as authors.

### The Use of Analogy.

Ucko (1967, 152) criticises Breuil for his easy conclusions from analogy, seeing no justification at all for the rather wild leap that compares the mass of engraved lines coming from an apex at Lascaux to a New Guinea costumed sorcerer. However this does not lead Ucko to a condemnation of the use of analogy, as we shall see.

The claim can be made that one use of analogy is to help in the avoidance of the pitfall of subjective interpretation, directed by one's own social and cultural heritage. It is precisely this weakness that Ucko claims is prevalent in the work of Laming (1962) and Leroi-Gourhan (1968), both of whom claim to shun the use of analogy, or at least see extreme limitations in it.

" --- all that the comparative method can do is to tell us that initiation rites exist among many primitive peoples of the world today, and that consequently prehistoric man may have had them, it cannot go farther than that. " and he asks " --- through what means can we hope to grasp more than a shadow of the inner life of the Australian Aborigines and Eskimos" (Leroi-Gourhan 1968, 35).

Although accepting these reservations as valid it does not I feel necessarily lead to the complete rejectionist view. To me it would seem that analogy used with care and awareness, can be a useful tool to assist in analysis.

As Kramer states , " It would be fatuous to repudiate completely data bearing on the behaviour of contemporary hominoids in attempting to understand the past behaviour responsible for archaeological variables " (1979, 4).

Nevertheless the difficulties are great, and as Ucko (1967, 151-152)) points out Anthropology illustrates the great variety of possible ideas, rituals, practices, religions, or cosmologies, which may be built on similar structures. Indeed the possible cultures which can be built on the Palaeolithic economy are many. compare for example Australian Aborigine, Amazon Indian, Eskimo.

Ascher (1961) suggest two forms of analogy. First the folk culture approach or direct historical, where the lineage is assumed between the prehistoric, historic and present; areas of the Middle



East may illustrate this claim. This category may to some extent be less problematic than the second since the process of movement and change should be made apparent. The second category, New Analogy is where no direct lineage is apparent, and indeed a variation in geographical and environmental situation is frequently the case.

If we consider Ascher's first type of analogy in relation to the Cup and Rings, we would be looking for customs and accounts still held or practised by the local populace.

There tend to be very few accounts for the Cup and Rings that I have found, compared to the cup marks; and there are more for the larger relatives, the basin stones or ballauns. Crozier and Rea (1940) give a number of ceremonies associated with the basin stones such as, fertility rites, cursing stones, holy wells with curing waters, or occasions when the dust from the stones was used as a cure. Gypsies at Les Saintes Maries used the dust as a cure for opthalmia, and also in marriage for fecundity . Crozier and Rea relate an interesting story concerning the stones at Keimameigh Co. Cork. A woman gained the displeasure of the local saint by churning butter from stolen milk, and for this she was turned into a pillar of stone, whilst her rolls of butter were turned to stone in the cup marks in the rock. Hadingham (1974) repeats the stories of some of the practices mentioned above. He mentions the large stone that lies on one side of the High Street of Dingle which I have visited. It lies partly in the street as an obstruction, the fact that it has never been moved may indicate the strong feelings that have been held towards it. It has many cup marks

and basins in its surface and the water which gathered in these hollows was thought to cure warts or rheumatism, or to correct barrenness in women.

The problem is to decide what is a cup mark and what is a basin. At the extremes in size it may not be difficult; but with a hollow of perhaps three inches diameter the decision could go either way. In Donegal one finds cup marks with a flat base of three inches or more diameter with concentric rings.

The Cursing stones were a more complex use of the basins. Round stones or pebbles were placed in the concavities and one's enemy was cursed while turning the stones clockwise. At times similar stones were used for Christian ritual but not for cursing. At Temple Feaghna County Kerry every Good Friday and Easter Sunday, after other ceremonies in the church yard, pilgrims would visit the bullaun or basin stones, and turn the stones in the holes. In one case of interest one of the stones placed on an Innishmurray altar was a Cup and Ring stone.

Morris (1979) offers us some myths and practices associated with the Cup and Rings. At Kilchoman in Islay, a pestle is turned three times with the sun in a cup mark at the base of a Christian Cross. In another situation a piece of silver is placed in a cup mark and then one's fertility wish will come true.

In the Faroe Isles cup marks are used for grinding and mixing flowers to make a dye. Whilst in Scandinavia other fertility interpretations of the Cup and Rings are found. The cup represents fire and the ring and radial groove the female element. Fire was made by turning a wooden pestle in the cup.

Hadingham (1975, 180) claims the filling of Cup and Ring marks with milk has been very common in many places; and Morris (1979, 20) supports this with a story from the Isle of Seil, Scotland, where a young dairy maid filled a large cup mark with milk every spring for the fairies. Failing to do this could mean that food would be short by the autumn.

Although these myths and practices may be of some enjoyment and interest I am doubtful whether they can be of any great help in gaining a deeper explanation for the Cup and Rings. Although it is possible they could trigger the imagination for the formulation of hypotheses that would need to be supported and upheld by other evidence and criteria. A major difficulty in placing this material in Ascher's first category of analogy is that as we have seen above he claims the need for direct lineage to be demonstrated or assumed between the prehistoric, historic and present. I am very uncertain that this is the case for the present inhabitants of the Cup and Ring areas, but it is a subject for future folklore and anthropological research.

Returning to Ascher's second type of analogy, it is the area in which extreme caution is necessary and a number of writers have suggested limitations on use. Ascher states that since most archaeological data yields subsistence-connected information, relevant analogies should be restricted to this area. J.G.D. Clark (1953,355) suggests restricting it to societies with a common level of subsistence, or ' --- under similar ecological conditions it leads to greater significance.' A similar repetition by Willey (1953,229). asks for the same general level of technological development, perhaps existing under similar environmental conditions. Nevertheless this may not eradicate the problems, as we can see comparing the Aborigine, Eskimo, and Amazonian; in these cases technology may have a vague similarity but not the environment.

Ucko claims, "It is not true to say that either the environment or the economy determines the rest of people's activities" (1967,156). He states that it is possible to find parallels in many aspects of culture between a hunting gathering people and an agricultural one. Indeed he says that useful comparisons can be made between non-literate societies and partly literate. Thus comparison between African, Spanish, and Cretan peasant becomes possible.

To put the brake on a little, even with people such as the Australian aborigines, who might seem closest to the Paleolithic cultures of prehistory, and have been a tempting source for analogy, we have no means of knowing the rate of, and how much change and

development their culture has undergone during the intervening time span.

We might look at Childe's (1956, 51-55) view on the question. He also seems to be more favourably disposed towards Ascher's first type of analogy. He points to wicker fish traps of a certain design and function that appear to go right back to the Mesolithic from the contemporary in Scandinavia. However with analogies that do not have the direct lineage he appears more hesitant, they only illustrate what 'may' have happened. In answer to the question whether they can define 'spiritual culture' he claims that the study of simpler peoples of today may demonstrate the endless diversity of human behaviour, and can suggest uses to which inexplicable data may have been put. The emphasis is really on the words 'suggest' and 'may', although Childe admits that confirmation could come from future observation.

My own view is that we must use analogy, since to reject it limits our interpretive possibilities immensely where means are sparse. However it can never form a convincing final argument alone for a particular interpretation. Each time a parallel is drawn, it is necessary to analyse all the relevant economic and social activities practised by the group concerned, before only looking at one aspect, perhaps art; naturally this analysis will be often severely restricted in many archaeological situations.

It then follows that comparisons, and often more than one, can only increase our awareness of the possibilities; first of the

factors, then causalities or relationships, involved in the analysis, and finally possibly an explanation. Put another way, one might say that analogy is useful or even vital at the level of initial hypothesis, when the stimulation of the imagination to the possibilities of explanation or interpretation is essential. However it is then most important that it is the archaeological data which adequately reinforces the hypothesis; and the more complete the fit of the data, and the development of a rich pattern in the parallels of the analogies, the more convincing the result.

It is in this sense that I interpret Ucko's statement, "Since the use of ethnographic parallels is concerned with the documentation of the variety of possible factors involved in particular human activities, any human activity that resembles in its achievements those which are being studied in the archaeological context is relevant and of interest" (1967, 156).

Or as Kramer states, " Observations of contemporary cultural behaviour and its material correlates, can suggest relationships among the archaeological data which are not immediately apparent: the utility of such observations to the archaeologist is greatest when their collection and analysis are designed to result in the formulation of hypothesis which may be tested against independent sets of archaeological and ethnographic data" (1979, 4).

To conclude this rather important discussion I refer to the concise statement of Glyn Daniel, which is also relevant to a number of other discussions in this thesis,

" And we must always remember three things. The inadequacy and incompleteness of the prehistoric record; the subjectivity of the art of historical interpretation; and the necessity of using ethnographical, historical and folk parallels in no deterministic way but as pointers to the possibility of interpretation" (1986, 362).

#### The Concept of Art in Western Society.

I wish to now move on to the main question of the chapter. Fundamentally this thesis is attempting to analyse in various ways some engravings of what appear to be intentional and purposeful shapes on rocks, mainly in their natural setting, and executed sometime in the past - prehistoric. This brings it within an area of interest which has come to be known as Rock art, which in turn is part of a wider field of study named often Primitive art, see perhaps Boas (1955) as an example. There would seem to be little problem with the word Rock, but Art and Primitive need I feel a closer examination.

The pitfall of examining other cultures from the subjective view of one's own cultural orientation is usually well acknowledged, but the depth of this orientation may not be so well understood, indeed many would argue that it cannot be completely eradicated. It is

I feel essential to emphasise the immense amount of cultural definition which is carried in a language and its semantic content, therefore it is a constantly reinforcing process in human interaction. These definitions can only be understood by constant analysis of some depth. Thus I would first like to present the word Art as an immensely culturally-laden concept, which can only doubtfully or problematically be used in the context of another culture; and this is certainly true of one that is well removed from us in time and space. It is thus important to look at the evolution of this concept and its changing definition in our own culture.

This changing concept of Art is reflected in the change and evolution of new meaning within the English language itself. Raymond Williams (1958) has described how certain words of some importance change their meaning over a period of time, mainly the turn of the 18th and 19th centuries. Among these are the words Art, Artist, and Culture. Williams argues that previous to this time the word Art tends to indicate a skill or expertise, and the Artist one who has a skill in any activity. Culture referred to a configuration of human activity. As the 19th century progressed Art referred to a particular skill in the area of painting or sculpture, the skill to create aesthetic values. At the same time the Artist takes on the role of mystic in touch with transcendental values, and to a greater or lesser degree an outsider. Culture forsakes its more general use and comes to mean 'higher culture' the special activities, namely the Arts, requiring good taste.



One might see this process taking place at various levels in society not only in language. Throughout history the forms of activity which we denote as art whether visual aural or written, have frequently been associated with the religious activities of the culture, and in this way used by the priestly group or the shamanistic practitioners, basically as forms of control and cohesion, but also involving expression, explanation and healing. Thus in historical Western society the artist was a craftsman providing objects to order for this religious use. However in other cultures shamans often practiced the making of art themselves (Jackson 1982). Grant, Baird, and Pringle (1978, 39, 40, 115) demonstrate the role of the shaman in the Big Sheep culture of the Coso Range in California, when giving their interpretation of the petroglyphs. There are many other examples in the past cultures of the U.S.A. such as the evidence on the many fine paintings in the rock shelters of Texas. The Hills (1974) explain the powerful role of the shaman amidst the N.W. Coast Indians, but they have to admit that the connection between shamanism and the petroglyphs is tenuous. However Lommel (1967) does see shamanism as associated with the beginning of human art, first in cave art in France and Spain, then in Primitive art around the world.

The relation of art, religion, and hence the priesthood is extremely clear in the Renaissance. The church is the major patron of the arts, the slow divergence and change comes with the increasing patronage of families such as the Medici. The power of the visual arts in particular over the average person must have been immense at a

time when there were few other competing images or even mirrors for many. Visual works of art were virtually a window on another reality.

When the artist is later mostly freed from the church and from the patron; the almost shamanistic mystical heritage may be seen to linger on, making him or her as I said above, an outsider with mystical or at least unworldly powers and associations.

I think it is true to say that in past known societies and those of today, social prestige and power which is invested in a work of art tends to be held by the possessor, even if a share is retained by the artist. This may take various forms. As we see in the case of masks, or sculptures, it is frequently the shamans or elders using the objects for their rituals who gain power from them, not necessarily the makers, although they may gain a lesser prestige in some situations. Good examples are the Benin society (Layton 1981), the Lega (Biebuyck 1973), and the Kilenge (Dark 1973), all of whom I mention later in the chapter.

I have already drawn attention to the Renaissance, where it was the church and clergy that gained the power from art forms. As lay patrons of art appeared such as the Medici, the power was shared with the church and the family, depending on the subject matter and the situation of the work. One cannot deny that some prestige and status also went to the well known artists and craftsmen.

The great families that collected works of art in the 17th, 18th, and 19th centuries, gained considerable prestige and status from their possessions, although this does not deny their aesthetic enjoyment. Forms of power were and are associated with this prestige, emanating partly from wealth, but also from aesthetic forms of knowledge and taste. This process continues today. The mystical aesthetic quality attributed to works of art may be seen reflected in the possessor upon acquisition, he or she becomes a 'cognoscente'. Nevertheless although it may at first appear that this relationship between the art object and the possessor remains little altered throughout history, there is an important difference between the situation in the earlier simple society and that of the more complex contemporary Western society, and I will return to this shortly.

We can pause for a moment to consider the Cup and Ring sites and the possibility that at least the major sites may have been used in a ceremonial fashion involving the shaman figure. certainly Burl (1979, 202) seems to have little doubt that shamans were involved in the ceremonies of the Stone Circles.

I will return to look more closely at this change in the role and identity of art in Europe. The Renaissance, as it passed, left, especially in the field of the visual arts, the model of the studio which produced works with assistants and master, according to its prosperity and status. Many paintings are to be found in the museums of the world by Rubens, yet the master himself probably painted very few of them completely. Works were commissioned by patrons, and they

had a great influence on the result; the artist was far from free, his skill was purchased by the patron.

Pierre Bourdieu (1971) gives a fine example from the field of literature. Lord Halifax has commissioned a translation of Homer by Pope. When it is read to him he suggests that a number of changes should be made to improve it in his eyes. Pope complies without question.

As Bourdieu says, "It is undoubtedly with the 19th century and as the romantic movement that the development towards the emancipation of the creative intention started, which was to find in the theory of art for art's sake its first systemic statement" (1971, 163).

As the 19th century advances a far more open situation is established. Then galleries and academies have appeared, the patron is far less common. Art especially visual art competes on the open market, as other marketable goods, but always with the association of that special aesthetic value which sets the newly defined concept of Art and Artist apart.

It is no coincidence that the category of La Bohème appears later in the 19th century. Slowly the social controls over art by the church and the wealthy disappear or at least change their structure. Art must then compete in the open market, by exhibiting its special creative powers by innovation change and novelty. Art as defined in

Western society becomes ever more confined to an intellectual elite, and to a large extent its social function is limited.

I did suggest a little farther back that art in the past may have frequently been the concern of the intellectual elite, in the form of the priesthood or the shaman. Thus one might suggest that little has changed except that the elite now tend to be secular, frequently intellectual, and/or with economic prestige. A most important and fundamental difference does exist however. In past societies and the more recent simpler ones, it would appear that although the art symbols might be controlled and manipulated by an elite, the majority of the members of the community comprehended the symbols, and were affected by them in a number of ways. In contemporary Western society the arts tend to be the preserve of only an elite and are ignored or incomprehensible to the mass. That is unless we change our definition and evaluation of what is seen as art in Western society, a point I will look at a little farther on. I feel that it is this fundamental difference that led often to a different involvement in earlier or simpler societies, of the artifacts which we in Western Europe label art today.

Therefore it is this 20th century European or Western definition which is an integral part of our cultural background, and must be considered with some care when using the term art to examine activities, products, and in the case of this study, visual symbols stemming from other cultures.

I think Durkheim's typology gives us an illustration and insight into this change in society, and can help us to see art within the social pattern of differing societies. Using concepts of 'simpler' and 'complex' societies, and illustrating with an ideal type model, he shows what for him is the change in the form of social cohesion, from 'Mechanical' to 'Organic' solidarity. Characteristics of the simpler society for him are, a common belief system about the world that is enforced by punitive sanctions. This is a cohesive force; there are specific boundaries of inside and outside the social group, and members are economically independent. We may come to see that the activities we refer to as art tend to support the belief system and social cohesion, although empirically there will be considerable variation. If we accept this then I feel that it follows that the forms and activities of art will have a relevance and meaning for all society, ignoring for the moment those forms that are ritually limited to certain groups or sects.

Durkheim's complex 'organic' society which evolves from the simpler, is one in which there is no common belief system, it is diffuse. Cohesion comes from the economic interdependence, and boundaries are open and loose; the civil code of law becomes important to ease the working of the complex economic system. This may be a rather truncated version of Durkheim, but with the melting away of the common belief system, the function and role of art activities will change, no longer restrained and controlled by social needs. It is free. At the same time, with open boundaries, it is also free to plagiarise and gather ideas from any number of cultures. Donne (1978)

for example relates the influence of African sculpture on the rise of Cubism in 20th century Western painting.

If we now examine Art in Western society in its conventional identity, that is museum and gallery artifacts, we find its purpose at large rather limited. Predominantly it is to give aesthetic stimulation or experience, and this is given high status. In a less obvious way it can give high status to the possessor, the creator, and the appreciator, and in this sense becomes a form of control. However it is important to realise that an alternative approach to the role or function of art in our society is feasible; this appears in the work of Baynes (1975).

Baynes illustrates that if we redefine the concept art to include virtually all pictorial and visual matter, as opposed to only that selected for the Gallery or Museum, the function and analysis is broadened. We can then see how this wealth of visual material plays an important role in the reinforcement of many dominant ideas in our society; in such areas as leisure, sex, war, work etc. and one may then wish to argue that it is then reinforcing some form of the albeit very diffuse belief system.

Having looked with some care at the identity of art in our own society, it is now necessary to look at its identity, role or function in other cultures. Usually these are of a simpler structure than our own, and I will be using anthropological sources as illustrations.

### The Concept of Primitive

Earlier in the chapter I said that I would examine the concept of Primitive Art, the general label under which Rock art is frequently subsumed. We have looked at the term Art, and I think Primitive can be dealt with much more easily. It is essentially an elitist term stemming from a period when normative and elitist views were held much more strongly in the West. Primitive contains meanings of inadequate, unsophisticated, and only first stage development. Most of these characteristics we now realise cannot be applied to the culture or artifacts of these other societies. Aborigines and for example the Turkano of the Amazon both have extremely sophisticated cosmologies for their worlds (Roheim 1945, Munn 1973, Reichel-Dalmatoff 1971). Much technology may be simpler, but it is perfectly attuned to their needs and the environment, unless of course the culture becomes defiled. Thus I feel that the term Simpler society would be more appropriate, and this used mainly with some reserve to describe the social structure.



### Questions of Aesthetic content.

When we come to look at art or visual images in simpler societies, whether from today or prehistory; it is I feel more useful to return to the earlier semantic meaning used in our culture and given by Williams (1958), art as a skill or expertise. The later or present meaning, as we have seen indicates activities in which the aesthetic function comes to dominate, although other functions may be present. In simpler societies we will find that it is the pragmatic or even utilitarian function and many others, which gain importance.

First let us look at some of the evidence which points to the presence or absence of an aesthetic involvement in simpler societies, bearing in mind the difficulties of methodology in obtaining empirical evidence of such an ethereal experience.

Williams (1974) talks of style which for him is the general characteristics of art symbols within a society, but these may vary somewhat in different situations resulting in a local variation. Outside of this he sees the variable of the aesthetic, which is to some extent fortuitous, and may or may not be present. If this is so then it presents great problems for methodology when trying to investigate the phenomena in anthropology and even more so in archaeology. However a number of researchers have not accepted such a pessimistic view, and due to the complexity of the phenomena, usually

tend to search for evidence of declared qualitative feeling about the works in question from the producer or user.

Horton (1965) on the Kalabari of South Nigeria would at first seem to indicate the lack of aesthetic involvement.

" Perhaps the most striking thing one notices is the general apathy about sculpture as a visual object --- sculptures tend to evoke not merely apathy but actual revulsion " (1965,12).

Nevertheless it may be that aesthetic involvement has no need to be pleasant or comfortable, and we do find that the Kalabari demand that a carved spirit should 'resemble' the decayed object that it represents, A carving can be rejected as inappropriate; it is then not only useless but a danger to the carver.

Biebuyck's (1973) work on the Lega of the East Congo Rain forest, shows that carvings when lost stolen or broken can be replaced by sticks etc. for ceremonies; yet there still are specific words such as 'busoga' meaning good and beautiful, which are used towards carvings. The problem is whether these are addressed to the specific carvings, or to the idea or origin of them, as is stated by Layton in his work.

"These examples suggest the aesthetic values are not universally expressed in exotic carvings or other forms of visual

expression, but are rather specific to certain aspects of other cultures " (1981, 10).

It is here that we should beware of another subjective trap. In Western 20th century culture we tend to view an object of art as static and in isolation; the museum assists this. Whereas frequently the mask, sculpture, cloak fabric etc. in other cultures is only part of a total ceremony, a happening, involving dance movement, music and sound.

Therefore questions about the role of art, aesthetic content or meaning might be more easily asked of the whole happening; unfortunately in Archaeology and certainly with engravings such as the Cup and Rings we have no way of knowing the whole. In the last chapter of this thesis when I attempt an analysis of the Cup and Rings, it is partly due to this problem that I take a structuralist and systemic approach. I will be assuming that all parts of the social and cultural system will tend to contain the same structural principles, and thus a part may illustrate the whole. In my case by focussing mainly on the spatial relations of the Cup and Rings, one is given an insight into the basic principles of the society, but only at the structural level.

Denise Paulme (1973) points to what was seen previously as a denial of aesthetic values in the nomadic life of the Pigmy. With the first sound recordings in the field it was realised that not only did they possess highly developed music, but their feeling for ritual developed a return from the hunt into musical drama. With their story

telling they mime scenes of familiar plots, and play the parts of various actors, engaging the audience in what Paulme claims is already theatre. This leads us to what may be seen as other ephemeral aspects of art and aesthetic involvement. M. Mauss (1947) points to the all important earth works, drawings in earth, wall paintings and structures of branch and leaf. It is important to keep these points in mind when examining Rock Art from the past, We may be only seeing a part of the total 'artistic' or ritualistic happening.

A more obvious aesthetic function, closer to the role of art in our society, can be seen in Paulme's (1973, 13) work on body adornment in Africa. The ceremony of 'grewol' bringing together the scattered tribes of Bororo Fulbe, is virtually a beauty contest for the young men. Although in the case of these tribes the function of cohesion is also important, one could well suggest that the case of 'fashion' rather than 'fine art' is a closer parallel in our society.

We will also be looking more closely later in the thesis at Faris (1972) on a similar subject.

Thus it is again necessary to look beyond our subjective expectations. R. Firth (1973) looking at Tikopia society describes a relatively barren society in the field of plastic art, although the ritual and ceremony was highly developed. Nevertheless in a corner of the culture a high design richness could be found, that is among the male headrests; a great variety of style and design existed, sometimes produced by more professional carvers or at other times by the owners.

There was evidence of much choice and preference which went far beyond the effectiveness and utilitarian function. Firth is convinced that these can be accepted as art.

Thus it would seem that although the aesthetic element is quite blatant and obvious in some tribes such as the Burroro Fulbe, in a society such as the Tikopia the aesthetic or what we might term the 'pure art' content is well subsumed within the other more practical functions. A 'pure art' or more manifest demonstration does not seem to be essential for the Tikopia since there appears to be little other plastic art except for the headrests.

Finally two simple but direct examples of objects having primarily an aesthetic function in other cultures. Blackwood (1961) mentions women potters in a New Guinea society who make little clay figurines out of spare clay purely for pleasure, and these are kept to look at. Whilst Muensterberger (1971,7) claims, that on the island of Nias, if the daughter leaves the parental home a statuette is made and placed in the house; this has no religious significance but is simply a memento. This of course does have an affinity with our own family photographs.

However it could be a mistake to follow the concept of pure aesthetic function too ardently. Goldwater makes the point strongly that it is entirely misleading when examining simpler societies, to attempt a dichotomy between an aesthetic function and the more utilitarian or pragmatic, the two are inevitably an integrated whole.

"What is in effect recognised is that beauty and naturalism are not generalised concepts which can be overlaid or omitted at will from previously imagined functional objects, changing their aesthetic aspect but not their function. The presence or absence of these qualities, in part determined by role, but also affecting that role by the impact they have, is an essential and primary aspect of these objects, as basic as their material substance or their iconographical character " (1973,8).

Thus when later I come to examine examples of the Cup and Ring engravings, especially some of the bigger and more complex configurations; it would seem that we may hypothesise that an aesthetic involvement could have been present in the carving and the arrangement, which fully reinforced the other unknown functions or function, giving greater power, force, and conviction to creators, recipients, and all involved.

It occurs to me that the example of the decorated and illustrated maps of the early cartographers demonstrates the above point in an obvious way.

### The Question of Function

Before proceeding with references to other functions, roles, or ways in which art activities integrate with cultures, it is useful to indicate my awareness of the problems which may be associated with the functionalist approach, since of course it has received much criticism.

First a methodological problem, mainly of concern to the Anthropologist or Sociologist. To what extent is the data gathered due to the definition of the actors, or is it imposed by the observer? Secondly there is seldom a nice neat linear relation between practice and function, as Anderson states,

"A particular phenomenon in a particular society may fulfil numerous psychological, social, or cultural needs. Moreover, the same practice may serve quite different purposes in another society" (1979, 27).

The third point is that although frequently the function of art may appear obvious, in other situations it may also have an underlying function, this we may term covert or latent, and it may be far from obvious to the observer or actor.

This point will be clearer when we come to the various examples I offer as illustrations a little farther on, such as the use of art in the Kilenge tribe. There it would seem to function as increasing prestige for great men, but on closer analysis one far less manifest function which appears is the safe diffusion of aggression in certain situations.

Finally a functionalist approach does tend to assume a stable society, and takes little account of structural change. In many societies institutions are disfunctional, and conflict may be far more than a fringe activity, indeed it may be the fulcrum for change. This may then argue for a conflict or perhaps marxist orientated approach.

To expand this point a little. I see the essential difference between a functionalist theory and the conflict as being related to the question of social change. In one sense it can be argued that a conflict theory, by exploring the disharmonies and conflicts between parts of the social system, does explain the dynamics and movement for structural social change. That is the change in control over major areas of power by different social strata, or the change in control over the major economic resources. Nevertheless considerable social change may take place of a technical or cultural nature without changing the fundamental structure. Thus the definition of the degree and nature of social change becomes important. At the same time the relative speed of change is important. In many societies although what some may term peripheral social change in the form of technology or cultural activity may occur, the fundamental structure of the society



in the terms I have mentioned above, may continue over a long period. It is this maintaining of an equilibrium and the dealing with disharmony, that the Conflict theory has some difficulty in explaining. Both theories have developed additions to give wider explanatory power. The subject has of course formed a never ending debate, but as I state at the beginning of my chapter on Structural Analysis, I feel it is impossible to define one theory as right or wrong, they are tools with varying degrees of explanatory power in differing situations. In this chapter I will continue to use an underlying functionalist approach, but with concepts such as disfunction, and latent function, as important parts of it.

As Anderson mentioned in the quote above, one finds that art is usually multi-functional in society. If we attempt to examine art activities which appear to be used as social control, we realise that this may subsume other functions, such as the maintenance of power, supporting elites, creating cohesion, justice, or even education in the sense of socialisation. At times it can also be seen as disfunctional as I stated above.

Harley (1950), observing the Mano and Gino, relates how the mask was used to replace the highly respected powerful dead elder, in order that he could still intercede in the affairs of the tribe. Or the final sentencing by a judge might be carried out with him wearing a mask and costume and speaking falsetto, hence he remained incognito and protected. In another instance the decisions of the elders would

be confirmed or denied by the throwing of cowrie shells in front of a mask, thus ostensibly it was the mask that decided.

Layton (1981, 72) in his discussion of Benin art relates that it was the Oba who had control over the ivory, and wore carved objects made from it; whereas with the Lega (Biebuyck 1973) it was members of the highest grade in the Bwami association who had the privilege. Again in Benin it was the Oba who also had complete monopoly over the very prolific brass casting industry. One could of course also point out the involvement of art here in the economic structure.

In the cases mentioned above the art forms are essentially used to give power and social control to the possessor, and certainly in the case of the Benin are totally involved in the economic system. When we turn to Rappaport's work there is a considerable change in the use of certain art forms.

Anderson (1979, 34) refers to Rappaport's work, which looks at the economic function. Tribes in New Guinea need stone axes and salt to survive and thus trade is essential; but the tribes that possess one or other of these commodities are separated by at least two other groups, and demand and supply will vary. The production of art in the form of bright feathers, shells and discs takes place, and these objects are then traded throughout for axes or salt by all, virtually a currency. Trade is eased since demand and supply is maintained.

Although some prestige and status may come from the possession of the feathers shells or discs, since they are virtually a money form. At the same time it is a money form that has its own intrinsic attraction and would possibly subsume an aesthetic content. However social control does not appear to be a noticable function. The essential use is to facilitate trade between tribes for very important commodities. Thus conflict can be avoided and survival ensured.

This work is important since it can open up an interesting discussion. Here we are dealing with mobile works of art, whereas the Cup and Rings are virtually static. Thus we may wish to argue that Rappaport's work is irrelevant, but I wish to suggest the opposite. First the work does demonstrate an exceedingly interesting example of the complex function a work of art can perform. However the important question must be raised as to what extent the social functions of a static work is limited. It is difficult to see how engravings such as the Cup and Rings could have performed an economic function of trade, unless in the form of initial paid skilled labour. Any prestige, status, or power would come from rituals enacted at the site, as would social cohesion. It is also quite possible for sex roles to be reinforced from activities at a site, or even forms of social conflict to be defused from rituals using petroglyphs. The possession, or control, over an impressive site might well have figured in any demonstration of power. The ownership or acquisition of a rockface carrying immovable symbols of significance to the whole society might have been a powerful stabilising force. The ability to produce symbols on demand or necessity might also have been an activity not open to

all, and thus the chosen artist would have extra prestige. There are a number of variables here which we cannot separate in the present state of knowledge, but anthropological analogy does give us illustrations of the many possibilities.

If we turn to look at mobile art, such as sculpture, masks, or costume, frequently they may be used stationary, such as much sculpture, or with local movement restricted to the vicinity of the shrine or village centre; they are objects in a ritual. The rock carving may also have been an object in a ritual, certainly it could not be used as an object of personal adornment, but this still may not enlarge the differences of fundamental function between mobile and static art, as much as at first seems likely.

Art used to reinforce social structure and control by creating and reinforcing status is seen in Dark 's (1973) work on the Kilenge, which I mentioned a little earlier.

" The motivation for artistic activity in Kilenge lies with the desire of big men to outstrip their fellows in the social regard of their peers, to enhance their prestige by outdoing their rivals" (1973, 67).

Ceremonies take the form of 'sing sings' which are total happenings with mask costume music and dance. These will be called up and sponsored by 'big men' from the various 'pigeons' or groups within the society. Although it will be the artist that carves the mask or

makes the object, he is only the means, it is the great man or sponsor who receives the admiration and praise for the product. Thus although the activities act to increase the status of 'big men', they also have other functions; they celebrate the circumcision of boys, and the puberty of girls. On occasions when the women in all their finery dance towards the male musicians, and are then warded off by armed guards, art and ceremony is providing an outlet for aggression.

The great importance and total social integration of art is described by d'Azevedo (1973) in his work on the Gola Vai and De chiefdoms of Liberia. Masks dominate many ceremonies but also music and performance ritual play a big part. Social structure is entirely dependant upon the male association, the Poro, and the female association the Sande; these take turns to rule for periods of three and four years. The masks used are seen as utterly sacred; and the woodcarver therefore produces them in utter secrecy. He is tempted to work for the women by having all his needs and desires satisfied: food, drink and sex. The carver becomes to a large extent an outsider in society, but with considerable power and prestige, since he also has an insight into secret ritual. After completion the carving is still his, and he continues to be entitled to favours from the women who hired him, even sexual. Thus not only do the masks support social structure, control and cohesion, but we can see how fringe social relations are established and maintained.

It seems to me that this work by d'Azevedo illustrates well many differences between art in our society and its function in many

simpler ones. In our society art is as previously stated so often the fringe activity of the privileged group, functioning to give prestige and status, but mainly seen as being for aesthetic enjoyment. Whereas with the Gola Vai and De chiefdoms it plays a fundamental role in supporting and maintaining the social structure which relies on a continuing delicate power balance between the sexes. The art products are seen as sacred and are not involved after production in any material or economic process, yet they are involved in power and control. As we have seen there is also a latent economic function for the producer, and a latent function of the development of extra peripheral social relations. What may also be seen as interesting is that the producer of the masks is seen as an outsider, but with power and prestige. one might well argue that although the function of art products is extremely different to that in 20 cent. Western society, it is interesting that the role of the producer or artist may not differ greatly in this case.

With this final reference in particular, but also the preceding ones, I hope I have managed to enlarge the definitions of art in various societies, beyond our own cultural vision. Hopefully Munn's work which follows and which I find relevant will add to this process.

#### An Alternative Theoretical Approach

Finally I wish to look at the work of Munn (1966, 1973a, 1973b,) on the Walbiri of Central Australia. Previous work has tended to refer

to mobile three-dimensional objects. Since the objects of my study are mostly static and immovable two-dimensional symbols, it is perhaps appropriate to look at more two dimensional work. It is also interesting that the dominant forms in Walbiri art are enclosures and frequently circles and concentric circles.

Munn's work gives an example of other theoretical approaches as opposed to functionalism. She attempts to explore the symbolic iconography of the people, especially the spatial orientation found in the drawing, painting and constructions. I find that this work has more general implication and relevance to my own thinking, which makes it worthy of later consideration in this study, as Munn states,

"Indeed it would appear at times that in some cultures one can abstract underlying simple visual shapes and arrangements such as circles crosses or concentric structures etc. which are reiterated throughout a range of media and behavioural contexts, and in which are bound cultural notions about order in the world as a whole" (1973a, 193 ).

The essential point that Munn makes is that an aspect of a cultural whole such as perhaps visual art, does not exist in a vacuum, it has strong connections and is thus integrated with the total culture. Within all parts of the culture there will be exhibited characteristics of basic principles which reinforce and underpin the outlook and conceptions that the people hold about their world.

Her work may be seen as a simpler form of intrinsic analysis stemming from the linguistic work of Sussure and often drawing upon aspects of Semiology. This is a line of thought that suggests that visual forms as well as written or spoken language, can carry ideas and be assembled appropriately in culturally derived normative structures in order to carry messages. In this type of analysis an attempt may be made to generate a grammar of symbolic form. However although Munn's work does not develop an over complexity in this direction, it does point to some in depth connections between spatial art concepts and the cosmology of the people. Thus again it is an important example of art's integration into total social life. This is further supported by Berndt (1971, 101) who states that Aborigine people have no word for artist, all can be involved, although some may be better than others or have rights through age or status. Therefore art is really subsumed under activities which we term sex, magic, religious, economics or even science. I find sympathy with Berndt when he claims that art is the cultural ingredient which colours and gives meaning to the social dimension.

Some points appear in Munn's work which can be developed here. We see that forms or symbols within Walbiri iconography have a number of different meanings, there is not a one to one situation. For example the centre of a number of concentric circles may refer to a waterhole, a hole from which dreamings emerge or return to, the locus of the ancestral past within a country, a child, semen, or a vagina.



It needs to be noted that it seems to be generally agreed in the literature that this variance in meaning for symbols continues with many tribes and cultures. It must remain an empirical question, but identical meaning for a form is extremely rare across cultures, although of course identical or like symbols may be used by many differing peoples.

However it must be clear that in the above paragraph I am talking of the actor's day to day meaning for symbols, and this should be clearly distinguished from the principles I will be searching for in the chapter on structural analysis. In my later search for structural principles within the Cup and Ring symbols, I shall be looking for underlying principles which are generalisable to one culture and possibly to others. These principles will tend to underlie most aspects or manifestations of a culture; whether they are recognisable by the actors in the situation or not is again an empirical question, and it is possible that they could be in the case of some artists or craftsmen. However they must be seen as distinct from day to day meaning of forms.

In the case of Munn's (1973a, 1973b) studies, there may sometimes appear to be a connection between meanings and some pictorial connotations of the symbol, but this is by no means always the case. Meaning can be read into a symbol which may have little or no apparent visual connection to it, and different tribes may have different meanings for the same symbol or motive. Boas states,

" --- that the sameness of form and the differences of meaning are not due to a geometrisation of realistic forms, but to a reading in of significance into old conventional patterns. --- The essential conclusion drawn from our observations is that the same form may be given different meanings, that the form is constant, the interpretation variable, not only tribally but individually. It can be shown that this tendency is not by any means confined to art, but that it is present also in mythology and in ceremonialism, that in these also the outer form remains while the accompanying interpretations are widely differing" (1955, 128).

#### Figurative and Abstract.

Before coming to the end of this chapter there is a point which is appropriate here and it can be seen to stem from what has been said about the Walbiri symbols. As we have seen the Walbiri symbols do appear at times to have some visual connections, circle for a hole etc; whereas Boas was referring to the completely 'geometrisised'. Thus we can see forms in art, contemporary, historic or prehistoric, which vary from figurative to the non-figurative or abstract. It is however true that the completely 'realistic' or figurative (assuming such a concept is feasible) seems to appear very seldom in simpler societies.

If one examines the visual works of art in Western society, that is artifacts mainly in galleries, one finds an extremely varied

mixture of styles forms and content; I attempted an explanation for this earlier. One can usually make a very broad distinction between the figurative and abstract. It is often claimed that the figurative work is easier to understand and appreciate; since certainly for the layman, an illustrative content is usually assumed for the figurative which is then generalised to real life situations, and understanding is seen to follow. Actually this does not always follow, probably seldom; for example religious iconography in much Renaissance art, or more recently the example of hidden meaning in many Surrealist or Dadaist works. It is this misleading assumption with art in our own society, which can so easily be transferred to the observation of art in other cultures.

In many cases of Rock art in the world it is assumed that we gain more insight into the figurative works than the non-figurative. I suggest that this can be a false assumption.

There are two levels of interpretation and identification. First we must identify the mark on the rock, categorise it in some way, and only then can we think of interpretation. Nordbladh (1981) in his work on the Swedish carvings demonstrates well the initial problems of identification. It is a great challenge with many shapes to decide whether it is anthromorphic or zoomorphic, for example, is a particular image a lizard, frog, or distorted human, see petroglyphs from Colombia (Jackson 1982). Is the figure ithyphallic or has it a sword on its belt (fig L5)? Categories which go beyond a figurative reference may be seen as even more problematic.

The more one studies visual forms whether contemporary or prehistoric, the more I feel one must accept the distinction between figurative and non-figurative as a continuum rather than two distinct categories. The more important question becomes, to what extent are the forms illustrative or symbolic; or of course as with many Christian images, symbolic and illustrative.

These questions must all be returned to later, when looking at style, methodology, and classification; but at this point it is important to say that even if we feel that we can identify an illustrative scene, a precise animal, warriors at Valcamonica (fig.L5) or Longhorn sheep in the Coso range, California . We must still be wary of an illustrative interpretation as opposed to a symbolic. For example if we put ourselves into a position of some thousands of years removed from the Christian era, and then we attempt to analyse the visual images that remain, the problem is illustrated. It can be seen in the work by Child and Colles (1971).

First there is the great variety of forms that are used for the Christian cross all having approximately the same meaning. However there are also a number of other different images which also have a similar or closely associated meaning; such as the fish in the earlier church, or the winged ox, lion or eagle for the apostles which have very definite symbolic meaning; and in addition the frequently misleading symbolic gestures of the Christ figure.

In her recent work on the extremely rich and plentiful petroglyphs of Easter Is. Georgia Lee points out that three dominant forms, the fish tail, the birdman motive, and boats, tend not to mix; they cluster together in autonomous groups and in different places; but boatbuilding and fishing did not take place in special places but all round the coastline, thus Georgia Lee suggests,

"--- these motives seemingly represented concepts rather than functional activities " (1986,78).

In Rock art the problem is well illustrated by comparing the work of Leroi-Gourhan with the work of Breuil. Breuil taking usually an illustrative interpretation, but Leroi-Gourhan the symbolic for the same material.

Some of the earliest approaches to Palaeolithic Cave art were extremely subjective, the caves were seen as Art galleries of the Stone age (Ucko 1967 21) illustrating the world of the day; pieces of stone or bone with superimposed images became 'sketch books' and palettes were also found. Later following these ideas Breuil (1952,21-24) developed his hunting magic theory, but both of these relied on an illustrative interpretation of the images; wounded bison, arrows and traps, and sorcerers. This of course is not to belittle the comprehensiveness of Breuil's ideas and immense empirical work.

After the second World War Leroi-Gourhan's (1968) theories took a leap away from an illustrative interpretation to a symbolic. There

are of course many criticisms that can be raised against his theories, for example the difficulty of identifying parts of the very varied cave layouts so that they at least partially conform to his ideal type; or perhaps the very loose way he is finally prepared to accept criteria for pairing, ignoring to a large extent scale, colour and style differences between the figurative images. These are only two of the major criticisms aimed at the basis of his statistical conclusions. However this is the healthy dialectic of knowledge, and as Parkington a careful critic of Leroi-Gourhan states,

" --- the usefulness and stimulation of Professor Leroi-Gourhan's ideas are in no way lessened by the critical attention they are bound to receive" (1969, 3).

Therefore Leroi-Gourhan's work illustrates fully the point I wish to make, that figurative images need equally as much care and open minded approach as the non-figurative symbols. Indeed in Palaeolithic art the two exist side by side, but due to the subjective pitfalls that I have tried to illustrate, it is the figurative work that has always gained the greatest 'press-coverage', and to a large extent academic interest. Gourhan is left with his two systems existing side by side, one figurative the other abstract, both he claims have similar symbolic meanings as male and female.

Stemming from Leroi-Gourhan's work is one final item of great relevance to this study. He illustrates how the use of symbols in a culture may exist over a considerable span of time possibly

accompanied by the same ideological beliefs, even when social structures and the technology changes. When the first cave sanctuaries in Western Europe made their appearance the figurative system and its underlying ideology had existed for several millenia. The origins can be seen on the rock slab at La Ferrassie (Peyrony 1934), Abri Cellier and Abri Castanet, from the Aurignacian I and IV; these were the symbols of animals, vulvas, and short strokes; and for Gourhan illustrating the beginning of the system of pairing, symbolic representation, and the mixing of the figurative and the abstract symbol, which comes to its final richness in the Magdelanian period. Later in this thesis it will be suggested that the symbols of the Cup and Rings could have been in use for over 2000 years.

Related to this question of the figurative and abstract, is the danger of easily identifying non-figurative symbols as originating from the figurative, and then assuming understanding. This can be seen in Breuil's hunting magic theory, where certain symbols such as the chequer board grid at Lascaux are identified as traps. Or much more related to the focus of this study, Crawford's (1957) work on the Eye Goddess. He traces the imagery of the 'Eye Goddess' from the Middle East to Malta, and as it slowly becomes the 'oculi' of Iberia, and eventually the Cup and Ring marks of the British Isles. From what I have said earlier and will discuss in more detail later in this study, I feel that there can be weaknesses in this process, of attempting to trace the movement of similar forms across cultures, unless there is considerable other supportive evidence. Suffice to say that Crawford

does not claim absolute conviction for his work, only initial hypothesising and interest, which it has.

### Summary

To summarise this chapter in relation to the total focus of this study, the Cup and Ring carvings of the British Isles and Galicia, although I may seem to have wandered a little far, I feel that it has been necessary to deal in some detail with certain vital issues. In all science and social science we are attempting to reach a high degree of objectivity, the pitfalls are always waiting and this is especially true in the area of Rock art; it is probable that we can never completely avoid them.

I have attempted to emphasise what I feel is the great difficulty of using value laden concepts such as 'art' in an analysis, and I have tried to illustrate with some care the cross cultural differences in function, form, and social integration, which the activities we name art have. This is an essential starting point. It may be claimed by some researchers that these pitfalls only arise at the point of interpretation, indeed this is why many who are involved in the field argue for not going beyond data collection. This I feel is false, since even in the area of data collection, perception, identification, and decision making is vital as I mentioned earlier. It is for this reason that I have drawn attention to the question of figurative and non-figurative at an early stage, although it will



certainly be relevant again later when dealing with questions of methodology, data, style, and classification.

As I have shown, the work of Munn (1966, 1973a, 1973b) is of interest regarding method and theory, as well as her empirical findings. The number of symbols used by the Walbiri is relatively small. Morris (1977) gives only about ten common symbols for the Cup and Ring marks of Argyll; this may be a little conservative, but Beckensall (1983) is more generous and gives about forty variations for the engravings of Northumberland. It depends on how far one breaks down the images into basic units or forms; rather than enter the discussion at this point I will wait until I look at the question of a grammar in my chapter on structure, but suffice it to say that the Cup and Rings have quite a simple vocabulary. Thus a 'grammatical' or 'iconographic' approach can be considered; certainly I hope to show that an examination of spacing and grouping can be of interest. However unlike the material of Munn's work and many of the Anthropological works I have referred to, in this study we are moving into the area of Prehistory and Archaeology, and our actors have been dead for thousands of years; therefore the problem becomes even more difficult.



### Recording and Methodology.

A great deal of discussion within the academic disciplines of science and social science is concerned with the validity of the theoretical structures that are built upon the given or discovered data. However, much questioning and debate should and does take place before this, regarding the nature and the obtaining of the data itself. This chapter will be concerned with this first stage of the process of knowledge, in relation to petroglyphs. See especially Nordbladh's work (1981) also Dubelaar (1986).

It is doubtful if the ideal concept of objectivity is attainable in the acquisition of data, that is in the sense of eradicating all subjective influences and elements. Nevertheless it is the goal that unites a community of study, and I will be concerned with examining the various methods of striving towards this goal in the recording of petroglyphs on natural rocks, most of which have the advantage of immobility. My particular focus will be on the topic of the thesis, the Cup and Ring engravings but I will be looking at a number of questions more generally. I will deal with this question of data collection in three stages; the second and third can be seen as developments from the first flash of perception.

1. First the petroglyph itself and how we assume it was made.
2. How we reproduce the initial material image in order to transport it from the natural situation, or on occasions from museums, in order to work with it.
3. How we perceive the image as a concept in relation to other images; that is how it is identified, classified, or typified.

This identification of stages, especially the last two, is really for convenience in discussion, rather than being seen as definite practical processes, since a degree of identification and conceptualisation will normally take place before an object is considered worthy of recording.

### The Petroglyph

I doubt whether anyone who has been concerned with rock engravings in the field, has not at some time or the other felt the adrenalin rise on spotting what appeared to be a petroglyph on a rock some distance away, only to find on closer examination that it is only a group of naturally eroded marks. Nevertheless to state precisely how one knows this is not so easy, and of course we can all be wrong on occasions. Identification certainly comes with experience after looking at many rocks; a storing away in the mind

of the characteristics of weathered marks, as compared to those made by man's intentional pecking or scratching.

The observer becomes aware of the marks from general weathering, but he is also quickly aware of the natural 'patterns' and marks on the rocks in a specific environment. For example the common glacial striations found on the rocks in North Italy and Switzerland, or the water worn cupules found on many limestone rocks. Rocks in the rapids of the Amazonas where I have recorded engravings, can have many fascinating images caused by water pressure wearing away the softer molecules and leaving others. In spite of these distractions man-made images normally disrupt and fragment the strata of the rock in a very different way. Nevertheless the problem can be complex, since at times humans have used natural rock forms, whether cracks, marks, or reliefs, to incorporate into their own images. For example one can see the interesting natural form next to cup marks at Fowberry Moor, this may or may not be intentional (fig.F6).

Depending on the rocks at his disposal, I have often been struck by the way the engraver seems to have chosen a rock with a smooth working surface, as a modern artist might choose a tempting piece of paper (fig.H6). The rock itself may also have a striking characteristic of siting, size or shape (fig.A2,B4). E.Anati (1976, 39, fig.29,30,39), illustrates how man may have chosen rocks shaped as torsos for his carving. At times features of the rocks may be included in the image giving a relief effect. On the raised Cup and

Rings in Spain (fig. I8, J6) the engraver seems to have intentionally used the relief of the rock, it seems to have affinities to the way in which much earlier painters used the ceiling of Altamira to give relief to the bison. This use of natural relief or marks in the British Isles is not common but examples can be found on rocks such as Roughting Lin, Old Bewick, and Lordenshaws, all in the Northumberland area (fig. D4, 6, E1, 5, 6, ), and again on the well known Galloway rock of High Banks (C1, 2, ).

Thin lined scratched images appear very seldom in the British Isles, such as those which were at Traprain Law in Scotland, but they are common in the Paris Basin (Morris 1981, 156 and Gilles Tasse 1982). The majority of the petroglyphs considered in this study seem to have been made by the technique of pecking with stone, probably by the use of a hammer stone hitting a quartz or flint point. Stones with worn down points have been found beside carvings in Val Camonica, Mt. Bego, and elsewhere, in addition to hammer stones (Anati 1976, 41).

Cup and Ring images can be found at various stages of development, from the faint hesitant pecked line , to the much more densely pecked image. It is generally assumed that often the pecked grooves were then abraded or rubbed to deepen the grooves and smooth them. At times this continues until a relief is almost achieved (fig. D6, F9, ).

To what extent in each case this deepening is due to grinding by the engraver or to erosion over time by the elements is difficult to say. Certainly on occasions when new petroglyphs are uncovered, such as Ormaig (Morris 1977, 112) also (fig.M), the peck marks are clear in quite deep grooves, suggesting that erosion may smooth them over time.

Few of the English or Scottish Cup and Rings are carved on granite, but in Ireland at Coomasaharn (fig.G1,H4,5) granite is carved, and in Galicia (fig.I5,6,7,9). It is difficult to decide which was preferred by the carver, since it is seldom that one finds two adjacent rocks one hard one soft, both with suitable surfaces. It is possible that availability and suitability of a flattish surface plus position, were stronger determining factors, and indeed this variability in selection of material suggests that position, not hardness or difficulty, was the major factor in rock art location.

It is interesting to compare the use of various rocks in the carving of the Stone balls (Marshall 1976), the earliest of which are found in the late Neolithic of Skara Brae. All types of stone are used but overall there seems to be a definite preference for the harder rocks such as granite and greenstone, with even an example in quartz, but far fewer examples of sandstone. Obviously since harder rock is far more difficult to work there must have been a specific reason for choosing it, either symbolic, aesthetic, prestigious or a combination of them.

As an experiment in Galicia I spent 20 minutes pecking and abrasing an engraving of a deer in granite (fig.J3); after this short time although the lines were not very deep, a distinct clear image could be seen. Even with granite I was assured by Alvarez Nunez (pers. comm.) that erosion was great. The process of washing away the softer elements in the rock over time causes a widening and enlarging of the groove by the collapse and undercutting of the sides (fig.J3). However the process and the result will vary according to the rock form and strata, and its actual inclination and placing in relation to the elements. As Beckensall claims,

"When the rock has been exposed to the northern weather the grooves can either deepen or become worn away; there is evidence of both" (1983,31).

Therefore man made marks and those of natural erosion are not normally difficult to distinguish with familiarity and experience; nevertheless confusion and debate continues at times, such as with the cup marks on the Scottish and Irish coasts that were used for bashing limpets (Prof. J.M.Coles, pers.comm.). This debate will frequently take the form of questioning whether a particular part of a line or image is natural or man made. An example of greater confusion can be seen with the stones of the Sherbrooke region of Quebec (Dubois 1985,63). These had been defined as examples of a Lybian language, indicating the possible presence of Phoenicians and others in America. That was in 1975, but later with greater team



work from other Geo-Physical disciplines it was agreed that the marks are natural.

Such confusion is not common with the Cup and Ring engravings, although extreme erosion and faintness can lead to indecision as to whether an image actually exists. Confusion can also arise as to whether individual solitary cup marks are natural or man made, especially in the case of water worn limestone.

#### Recording and Reproducing

Having taken the decision that an image is man made the next process is that of recording or reproducing it. All processes will contain their own distortions and will invariably involve varying degrees of subjective decision making. I will look at free drawing, rubbings, tracing, photography, and casting or moulding.

Anati (1977,3) claims that the first tracings on rocks were made by Peder Alfsson in Sweden 1627. This is correct except as Nordbladh (1981,G57,fig.2) shows they were free hand drawings. The variation in result from free hand drawing can be seen by comparing the images produced by the researchers of the Cup and Ring rocks in the last century. In Beckensall (1983,85-87) one can compare the drawings of George Tate (1865), J.Collingwood Bruce (1868), and the author. Tate's drawings give us a rather tidied up version of the carvings, whilst still suggesting a textured surface; whereas Bruce

appears to attempt a 'realistic' approach which includes varying texture, cracks, erosion, and imperfections within the engravings. Beckensall abandons all attempts to give an interpretation of texture or the 'feeling' of the images and resorts to a broad simplified diagrammatic style, which since it is based on tracings still contains a high degree of spacial and proportional accuracy.

Here we begin to touch upon aspects of a complex discussion. What are we really trying to reproduce and transport away, what is to be taken as the 'find' in theoretical debate? This is the basis of Nordbladh's (1981) discussion. Is it the meaningful image on the rock as the creator saw it from a variety of angles and perspectives, as near as possible to his perception? The photograph or precise drawings may come closest to this. Alternatively is it statistical dimensions of size and shape taken from an assumed common viewpoint, which attempts to eradicate variables in order to give objective comparisons? In this case various diagrammatic approaches may be more appropriate such as those mentioned in Beckensall's work or Nordbladh and Rosvall (1975).

This simplified diagrammatic style has become common in much literature, and if based on tracings and then backed up by photographs gives a considerable amount of information, but if produced in a hurried or haphazard way can be extremely misleading. The difficulty stems from not making one's methods explicit. Are we to take a writer's drawing or diagram as highly accurate or as a quick sketch and impression? I have personally been confronted by

this problem on several occasions, for example the diagrams in Brian Lacey's paper (1983,100) which vary considerably from my photographs to the extent of excluding a whole Cup and Ring above the parallel lines in (C).

The interesting debate over the loose rock No 10b at Derrynablaha (fig.H1) between Shee and Kelly (1971-2, 1976-7) and Coles (1965) which I have referred to earlier, is based very much on the interpretation and description of the stone and its image. My photograph illustrates well the difficulty of obtaining a precise and accurate diagram or drawing of such a stone.

Morris (1979,102-3) comes upon the problem when he is searching for stones using the older drawings and information from F.R.Coles (1894). The problem then becomes, are the stones that Morris finds different to those in Coles drawings, and therefore other stones were or are present, or are the drawings just inaccurate renderings of those that Morris has found? At times Morris finds the need to update the earlier drawings of previous researchers by what he considers are his own more accurate drawing,

"The sketches of Bruce's time, referred to above are not very accurate, and the diagram now produced has been completely redrawn from tracings on the site" (1981,103).

The subjectivity and frequent inaccuracies of free drawings may not be surprising, yet it was the only means at the disposal of

earlier researchers, and I think that we can admire considerably the thorough precise skill that went in to many of the drawings, especially those of J. Collingwood Bruce, mentioned above. In spite of the inadequacies they still manage to convey often a particular view of the nature and character of Cup and Ring carvings, which other forms of copying may miss.

If we now move to photography as a more contemporary and obvious form of reproduction, which probably eradicates much subjectivity, we still find many inadequacies, and a continuing need for subjective decision making.

First there is the choice between black and white or colour. Although it might appear that colour can translate more accurately the nature of the rock surface, unfortunately it may do so at the expense of the all important tonal contrast and texture of the image. Although this will vary with the particular film, rock, and engraving, however given excellent conditions, expert photography and appropriate film, colour can I am sure give as much if not more information than black and white film. Unfortunately conditions for photographing rocks are seldom ideal, and the images on rocks frequently indistinct.

Considerable technical experimentation has taken place with the photography of Rock art, especially with colour. Artificial light has been used. Raking light photography, and flash at night have been used to good effect in order to increase the tonal

contrast of petroglyphs. Nevertheless considerable distortion results, especially if one thinks of the original image as made and seen by the creator.

Wainright (1985,32) also praises the results that have been achieved by stereophotogrammetric recording. It gives more dimension stability, and a reduction of image distortion, and above all correctly processed plates are ideal for long term preservation.

Anati advises the use of micro-lenses which can allow enlargements of details up to 100 times,

"A group of hammerings of five millimetres can be thus studied when enlarged to half a metre" (1977,28)

From these techniques plus accurate tracings of peck marks which I will describe later, and practical experimentation, Anati claims to be able to tell the type of tool used, the process of manufacturing the carving, superimposition order, and even whether the artist used his/her left or right hand.

At the moment, taking in to account practicality in the field, I suggest that the black and white film can give the more distinct powerful image for a petroglyph (not necessarily for a pictograph/rock painting), and it is more easily boosted and intensified to give a required result, although here the subjective process comes in. This preference for black and white seems to be

shared by many writers on the subject, but economic factors may well be involved. Finally and all important, at the moment the black and white film has a far greater degree of permanence than colour.

Many carvings are faint and in order to create a clear photographic image an intensification of the tonal contrast is necessary (F2,3,H5). This can be achieved when the sun is at its greatest oblique angle, that is early morning or evening, or by wetting the carvings. Frequently both are used, see Morris (1977, 40-41) and (fig. A10, C7, 9, 10, ). In a number of my photographs I have used wetting as can be seen, this is usually to strengthen the images on rather dull days.

Cruder systems of attempting to clarify images can be used, such as chalking in the grooves and cupules, or as seems to be used often in Galicia (A. Garcia Alen 1979, photos 72, 93, 94) blacking in the grooves. Possibly this method does equate more with the natural shadow, and does not create such an extreme artificial contrast as white chalk. The main disadvantage with both these methods is the subjective decision necessary in deciding precisely which area to chalk in; one may create an image! It must also be stated that in some countries any such additions to carvings however temporary and apparently harmless are illegal.

There are occasions when chalking is useful, if any form of photograph is to be achieved, but it needs to be used sparingly and as a last result, not on almost any image regardless, for example

see the A. Garcia Alen (1979) above. Fernando Javier Costas Goberna (1984, 240-41) demonstrates clearly the difference between the blacked in petroglyph and the same one photographed naturally. By these various methods clear images may result, but one is selecting and intensifying certain aspects of the visual data.

More important perhaps than the above, the general limitations of most photography need to be realised. One may have an accurate record of the number of rings, number of cup marks, and the flow of connecting lines, but for any image or collection of images covering a large area one immediately has the great distortion of perspective, scale, and proportional spacing. The smaller the image the easier it is to counteract this distortion. Ideally one would wish to photograph at right angles to the centre of the image, or to photograph at right angles over sections of a large image and piece the sections together as a simple mosaic. The former is seldom practical without much scaffolding, the latter more feasible. However many petroglyphs are found in very inaccessible places, the rapids of rivers (fig. L10) or the rock walls of lakes in Canada.

In spite of these limitations photography does form an important 'back up' source of recording for petroglyphs. Nordbladh states,

"It is the type of documentation which according to our conventions most resembles our way of seeing" (Nordbladh 1981, G11).

In my previous references to colour photography I was mainly concerned with colour prints; slides need a separate mention. Colour slides although having some of the inadequacies of colour prints, are important for projection to groups, and are still used in most resource libraries. Unfortunately they do have a limited life even when well stored, and this is causing some concern, especially since rock art is being destroyed by natural causes, development projects, and vandalism world wide. Discussion is taking place on the possible use of the coloured computer disc, which is capable of storing vast numbers of images. Nevertheless the importance of developing the use of permanent computerised data banks for rock art is fully realised by the International Council on Monuments and Sites (BCSP 22 1985, 24, 31, 138).

A less used medium of recording is the rubbing, either with thin paper and black greased crayon or on cloth, although other variations are possible. It is a method that was used with a high degree of excellence by Beth and Ray Hill (1974) with their work on the west coast petroglyphs of Canada. By using a reverse printed photograph of the rubbings they achieved fine dark clear images. For this process the state of the rock surface, definition, and the texture of the engraving is all important. Most of the West coast images are on smooth rock, and are smooth edged engravings. However although strong clear images are achieved one still tends to lose other aspects such as the three dimensional feel of the rock, its contour and relief; it is a single density image and thus some distortion is again involved.



Although some Cup and Ring marks do lend themselves to this form of recording, many are far too fragmented with a rough broken undulating surface, which denies the possibility of recording a large area in this way. Rubbings do give accurate proportions, scale and relationships if covering a large enough area, but they may exaggerate the width of the engraved lines, this will depend on the actual profile of the groove. On some rocks if an excess of rubbing took place it could be claimed that damage might occur.

I have been dealing with processes of recording what is virtually a three dimensional surface by two dimensional means, but it is feasible to take three dimensional copies in the form of reliefs. Some of the first examples that I know of were made at the end of the last century of the fine Cup and Ring engravings at High Banks, Kirkcudbright, by Hamilton; these are now in the Kirkcudbright Museum (fig. K4).

Today with various latex and synthetic moulding materials casting is easier. Nevertheless it can still be fraught with hazards for the rock. To my shame I once tried to take a latex cast of a bear's paw petroglyph in California (fig. L8); the rock was very soft and undercut, and in removing the cast one or two small pieces of carving came away. Therefore the process of casting must be used with extreme caution, and although it may give accurate reproduction, its use is inevitably limited by questions of storage and transaction for publication. In special cases at times it has had a very valuable use; these are occasions when carvings are to be

destroyed for what is seen as essential development schemes; building, quarrying, dams, reservoirs. Carvings at Traprain Law, Scotland, which were destroyed by quarrying, were either first removed in fragments or taken as casts, and then moved to the Edinburgh National Museum of Antiquities (Morris 1981,156). In British Columbia, Canada, at the Cranbrook petroglyph site, severe exfoliation and vandalism induced the authorities to bury the site, but, before this, thorough recording took place, contour maps, drawings, photographs, and latex mouldings (Wainwright 1985,28).

Finally comes the recording method which has tended to gain precedence throughout the world of petroglyph study, that is the tracing of rocks on to thin transparent plastic sheeting. It was probably first developed to a high level of sophistication at the Centro Camuno di Studi Preistorici a decade or two past, and has now spread. It is a method especially adaptable to the rocks of the Camonica valley in N. Italy, and can have some limitations in other areas, depending on the type of rock surface and the weather conditions.

A rock is first cleared of all soil and debris. it is then washed with a non ionic detergent, after which a coat of casein white is applied all over, especially into the markings. A charcoal black is then rubbed lightly over the flat surface area. Thus all the markings are induced to stand out clearly. The colour wash also has the effect of inhibiting the growth of lichen and algae by impeding photosynthesis, and hence helping to preserve the rock for

a few years after. Anati (1977,22) claims that in Val Camonica colouration fades in two or three years if in the open, but the process can be repeated. Although this process is claimed to help preserve the rock by the centre where it was initiated it should be pointed out that it is prohibited in some countries and on certain rocks; thus opinions differ.

After the above procedure the rock is then covered by a thin transparent polythene sheet, and if large it can be squared off. Using thin black fibre or felt tipped pens the peckings and gougings are copied as accurately as possible, in theory every peck mark. Natural markings or, as in Val Camonica, very different fine filoform markings, can be rendered in an alternative colouration. At times it seems that these filoform scratches may have been sketches for the other larger engravings (Anati 1977,29).

The finished plastic is then transported to the workshop or studio where it is traced with permanent black ink; again the aim is for each mark to be reproduced. The tracing can then be permanently stored and photographed to required scales.

This is probably the most accurate way of reproducing engravings, especially from large complex rocks. However a subjective element does creep in. The person making the original tracing is faced with decisions; it is humanly impossible to reproduce all marks with situations of very dense peckings, thus choices are made. With many petroglyphs the edge of the groove is

rounded, and a decision must then be made regarding the point at which the edge of the groove begins, this then affects the width of the groove, and inevitably the distance or space between it and the next image. Returning to my discussion at the beginning of this chapter, the person tracing will often have to decide whether a peck mark or scratch is man made or natural.

This method can also have practical problems with the weather and humidity. Nothing is more pleasant and controlled than sitting on a rock in the dry atmosphere of Italian sun and making a tracing. The situation is far more difficult and often frustrating in the humid climate of Ireland, where even in summer wind and rain are common. Even when not raining if the rocks are damp or contain moisture, the underside of the plastic sheet steams up and makes tracing impossible.

Although tracing on rocks with a high relief (fig. D4, E1, 6,) is possible, it becomes far less accurate, and decisions regarding edges and boundaries far more problematic.

This form of tracing can give a very accurate rendering of scale, proportion and space, plus some feeling for the texture of the engraving itself, but it gives no idea of the rock texture or of the three dimensional and relief characteristics. Kalle Sogness (1986, 133) is concerned with this problem and suggests the use of 'T' figures to indicate orientation and the angle of inclination at various points on the map when tracing an extremely irregular

surface. By using stereograms it is then possible to compare relief and orientation characteristics of rocks and sites.

I have now discussed some practical methods of achieving the first stage of reproducing the image. Most methods have strengths and weaknesses and therefore for adequate recording more than one method is necessary. Two recent recorders of the Cup and Ring engravings of the British Isles, Morris (1977,1979,1981) and Beckensall (1983), use schematic tracings backed up by black and white photographs, plus of course considerable written description.

It is highly desirable that for all new rocks a systemic method of documentation should take place; Anati (1977,5) suggests four phases and seventeen steps.

A. TREATMENT.

1. Cleaning the rock.
2. Study of the causes and degree of deterioration.
3. Study of incrustations.
4. Preparation for tracing.

B. DOCUMENTATION.

5. Tracing.
6. Photographing.
7. Casting.
8. Numbering.
9. Cataloguing the figures

10. Study of the techniques of execution.
11. Study of the relative chronology according to superimpositions, differences in patina and the degree of preservation.
12. Differentiation of groups, scenes and styles.
13. File of the rock.

C. ANALYSIS.

14. Analysis of elements.
15. Discussion.
- 16..The rock in its setting.

D. SYNTHESIS.

17. Interpretation and synthesis.

It must be admitted that in spite of the work of Morris and Beckensall, who have been frequently referred to in this thesis, and the more recent publications on Yorkshire by Hedges, and Volume VI of the Royal Commission on the Ancient and Historical Monuments of Scotland. Mid-Argyll. The degree of detailed recording recommended by Anati has not been carried out on the British Isles rocks, or those of Ireland, with very few exceptions.

Anati also states, "In each project the methods used must be modified to ensure that the basic data required for analysis can be obtained; that is, analysis is planned in accordance with the

questions to which projects intend to provide the answers" (Anati 1977, 3).

There could be a problem here, since a particular theoretical approach to a situation will demand specific forms of data and perhaps bypass other aspects, and the question can then be raised over the objectivity of data and to what extent it is theoretically determined. If one is surveying a rock for all time and to store in a data bank, then the data taken must be as expansive as possible in order to meet any possible foreseeable enquiries in the future. Of course one can never anticipate fully all technological and theoretical developments that may occur.

So here we begin to find the link between data and theory. Data are selected and refined in many ways, and are never absolute as we see from Nordbladh,

" The reproductions modelling of reality is not given. Many possibilities exist, which note and stress different qualities in the models and express these in different ways" (Nordbladh 1981, G9).

After this primary recording the images undergo further redesigning in the process of publication. This stage is well documented by Nordbladh. The many forms of printing for publication will effect the image, as will changes in scale, proportions of pages, composed pages and associations. It is this twice removed

object from the real world which becomes transacted and may form the basis of research and knowledge.

I mentioned earlier the rather common convention of the thick black diagrammatic line which has evolved in much documentation to illustrate engravings, it is a considerable abstraction from the actual rock face and its often crudely pecked outlines. I use this form of drawing myself at the end of the thesis for individual drawings of the various Cup and Ring forms, where I am mainly concerned with emphasising differences of shape. This technique may pass on useful information, especially when backed up by photographs, at the same time it can become an entity in its own right and influence analysis. Far superior to this thick black diagrammatic line is the form of drawing published recently in the work of the Royal Commission on the Ancient and Historical Monuments of Scotland 1988. Presumably drawn from tracings, nonetheless accuracy and a feel for the rock character appears to have been achieved; of course considerably more work must be involved than with the simple diagram drawing.

The problem is that it is the reproduced image which tends to become the 'object' displaying the various distortions and emphasis that occur in the process of reproduction. This situation is of course not only limited to Rock Art, it could be said to exist for most artifacts that are reproduced in various ways.



Norblah himself seems to take a rather pessimistic view about the relation between the object and its documentation, at least in the case of petroglyphs, saying it lies more in convention than in real reproduced illusion. Although I appreciate this view and well realise how easy it is to omit valuable aspects of the data by the use of inadequate recording methods; or to accept in discourse one limited form of image. I do feel that with the use of a number of different methods each having their own advantage and disadvantage, plus the written word, a total assemblage of data close to the object can be achieved, even if this is not possible in one reproduced image.

Much work on petroglyph analysis has tended to be focussed on individual images, similarities or differences between them, technique and location. Far less emphasis has been placed on the image context, their association. The nature of the surrounding images may well be essential for meaning, likewise the arrangement and spacial relations. Some of the last points I hope to give more attention to in this thesis. Important to this chapter is the point that any change of focus in research tends to have implications for the documentation itself.

### Identification and Classification

As I stated at the beginning of this chapter on Recording and Methodology; I am treating the process in three stages, although they are actually closely related and tend to interact and influence each other.

I have looked at methods of recording images or duplicating them, and we have seen those aspects of the processes which are most vulnerable to subjective decision making or distortion by the media itself.

In order that this primary data may be utilised for analysis and lead towards explanatory theories or hypothesis, the process of grouping images or at least forming visual concepts, becomes necessary. Even in the extremely individualistic art of the 20th cent. Western society, schools of painting, sculpture and other art can be and are identified with some confidence. it is a procedure of identifying common characteristics and then grouping and subgrouping the related images.

In the first instant the question of what 'common criteria' is an open one, but it may well be influenced by a researcher's preliminary hypothesis, or his or her interests. It could also stem from the initial identification of the images themselves, and this

would involve the almost unavoidable influence of one's own social/cultural perceptual background.

In spite of these strong influences the aim must be towards identifying groupings or common characteristics which are relevant or related to the original culture. Conkey argues that style emerges only at a certain stage in Homo Sapiens evolutionary progress, it relates to the development of conceptual abilities, and from this comes the rise of symbolic information systems.

"Style and its variation is the cultural code within the symbolism" (Conkey 1978, 67).

Following Gombrich, Conkey sees the artistic process as one of "--- finding making matching. --- images are derived from conceptions or coded schematic conventions ---" (1978, 64).

Thus Conkey claims,

"If art is seen as a conceptual process it follows that a given style reflects similarities in at least the finding processes of its producers. Thus we can characterise style as reflecting common encoding and decoding strategies" (1978, 64).

Style can then be seen as partly 'vocabulary' or 'grammar' of a symbolic language.

The question of style must be examined in this context of grouping or classification, but the procedure has given rise to many problems and debates.

I will take the work of Pessis (1986, 129) as a starting point for discussion. She suggests three systems of analysis for the concept of style, the technical, the representational, and the interpretational.

The first, the technical construction of the image as a common factor of style, this may appear to be the least controversial or problematic. Sackett states it as being,

"--- highly specific and characteristic manner of doing something" (1977, 370).

Or a particular effect produced on an artifact which is peculiar to a specific time and place. Thus tools used, technique, and medium are relevant. With rock engravings it could mean the method of pecking, scratching, grinding, abrasing etc. but Pessis takes it farther and includes the technique of pictorial space and perspective. The problem is that this then takes us out of her first system into the next, the representational - how the actual form of the image is presented or formulated. What criteria for the representational would make it distinct from the technical?

The representational would place emphasis on common aspects of decoration shape and form, leading on to the engraver's way of depicting anthromorphic or zoomorphic images, tools, or weapons. This then comes closer to Gombrich's concept of the schema (1960). It could be suggested that schematisation would be a more useful term for this stage. Forge (1977, 29) interestingly defines schematisation as abstraction constrained by representation.

Rosenfeld takes us farther, she claims that the degree of schematisation refers to, first, the extent to which traits are emphasised, and, second, the extent to which other traits are either reduced or omitted, but she states,

"--- figures which share both manner and degree of schematisation may still differ in execution or style. For instance the engravings from La Roche Lalinde are shown in continuous outline and hence differ in style from say Hohlenstein or Fontales engravings in which torso and buttock lines are discontinuous" (1977, 95).

When she refers to execution or style, it would appear that Rosenfeld is leaning more heavily on a technical definition of style, limiting it to system one of Pressis, but one can see a problem. Is the omission of buttock lines a technical variation or an intentional variation on the formal presentation?

Once one begins to move to the activity of identifying animals, humans, weapons and other objects, one is entering Pressis third system, interpretation. The debate over the classification of images, as to whether they are anthromorphic or zoomorphic is immensely difficult to resolve! The confusion between the lizard, human, or frog, can be misleading or almost indecipherable (Jackson 1982), and of course with what appear to be non-figurative images the problem is immense

The above problem is well perceived in the work of Guidon and Pessis,

"All recognition is suggested by the indices contained in material representations. The label 'anthromorphic' attributed to a drawing is already an interpretation" (1981, 51).

If we return to the paper of Rosenfeld (1977, 100) the problem is well illustrated. She refers to the difficulty of deciphering images at Pêche Merle; for some they are bison for others female figures, and as Rosenfeld states for A.Leroi-Gourhan they can be both; but it is also possible that they could be imaginary animals for which there is other evidence in the cave. From this one wonders sometimes at the confidence displayed by some researchers in the identification of forms.

This confidence is well questioned by Mackintosh (1977, 191). He re-entered caves which he had visited and analysed in Australia

two decades before, but this time with an Australian Aborigine artist and guide. he found his earlier interpretation at all levels very inaccurate, that is.

1. The actual forms and what they represent.
2. The connexions and relations between forms in the same context.
3. Of the cosmology and belief system behind them.

Mackintosh's conclusion is pessimistic. Any accurate interpretation of the artists intention is almost impossible to obtain from viewing the images as an outsider from the cultural context.

This extreme view based on empirical observation, must be seen to be of importance. It is certainly taken that way by Ucko (1977) in his introduction. We do not know in detail Mackintosh's experience and knowledge of cave art on his first visit, but he claims to have researched thoroughly all available comparative material, and to be fully versed in the anatomical details of the relevant animals. Yet I feel that in his paper there is a confusion or blurring between different levels of identification and symbolic meaning. When an animal is painted it may have certain characteristics which denote that it is a certain species, but all important to the creator may be its symbolic meaning and this is what is being depicted. Thus the species of the animal may be easy to identify or not, according to the information given by the artist

and its accuracy. It is of course quite possible for the artist to be ignorant of zoological aspects, or to change them to suit other demands. Beyond this the symbolic meaning must raise far more difficulties for the observer, and it follows that the relationships between the forms at the symbolic level will inevitably be equally difficult to understand. One way open to the observer if no subject from the culture is available to help, is to search for a possible insight from comparative material, the use of analogy. I dealt with this question earlier in the thesis. However Mackintosh in this case claims that the insights he used from comparative material on his first visit turned out to be misleading.

Respecting the difficulties of identification and meaning which are stated by Mackintosh, it still does not seem to me to lead to the dead end of pessimistic inaction. Perfectly valid activities of recording the many repetitions of association between forms, which even if not 'identified' can be described. The noting of scale relationships between forms and the characteristic use of space and colour if applicable, can begin to develop knowledge, and the growth of 'grammatical relations between forms. Superimposition can be noted and questions of chronology approached. As Ucko (1977, 17) states, paintings can be subjected to 'normal archaeological' analysis and cultural insights gained from these approaches to chronology and distribution.

As Pessis herself says and seems to be supported by Mackintosh, the third system, that of interpretation, becomes



extremely difficult if not impossible for some to tackle in Prehistory where the artist or engraver and his view of reality has disappeared for ever. I will return to this point in my chapter on Structural Analysis.

Shapiro (1953) and Wollheim (1979) avoid the problem of interpretation in their analysis of Style. Shapiro states,

"By style is meant the constant form and sometimes constant elements qualities and expressions in the art of an individual or group" (1953, 287).

Wollheim (1979) extends this. He sees style as relating to different groups, the large cross cultural group involving the 'classic style or the gothic', the smaller grouping of the school of sculpture, music, or painting, and finally the style of the individual. However Wollheim finds some difficulty in defining the essential difference of style between the individual and the school. This I feel could lead to even greater confusion in any archaeological reading; but an important point is made by Wollheim,

" --- a preferred strategy should be to see whether the original style description had not been written on an insufficiently abstract level" (1979, 143).

Here I think he is pointing to the danger of easy literal interpretation of forms, problems I have discussed above, and is pointing to the need for a considerable structural definition of style, which I feel gives us a valuable guideline for the establishment of style with examples of prehistoric engravings.

At this point it is enough to say that I feel it is necessary to take in to account the first and second systems of style suggested by Pessis. The emphasis placed on the technical or the formal will depend to some extent on the work analysed, but great care and reservation needs to be taken in the identification of images, although again this will depend on the specific data; often a description by shape and line will be safer in the first stage of analysis until further evidence comes to light. It is all important to make one's criteria of style perfectly explicit and to maintain them. For example Franklin (1986) tends to shift ground by moving from the technical to what I have called the formal definition, based on distinctions of shape and decoration. The two sets of criteria could be combined, but this needs to be explicit.

Within the debate on style various hypothesis have arisen to explain the distribution and movement of styles of artifacts and the relation to social structure. The literature and debate is lengthy and large, I will only touch here on a few important examples.

The spread of style is seen as indicative of social interaction by Whallon (1968), and style has also been seen as

indicative of social boundaries. Conkey (1978) has seen style as a conscious statement of group solidarity or identity, expressed in items of material culture. Later in the thesis I will look at Hodder's ethno-archaeological work, which sheds some further light on the matter.

Since these ideas have received considerable criticism, Franklin (1986) suggests we take a stochastic view of style as opposed to an emblematic. She claims that,

"--- (stochastic) styles have their own pattern of variation which do not necessarily coincide with a particular social group" (1986, 122).

Thus they may or may not coincide, the question can be left open. Yet Franklin herself does seem to still believe in a relation between style and social life, since her final conclusions are that the change in Aboriginal Paramite style to that of the Simple and Complex figurative, indicates a form of social change possibly in the form of interaction.

D.L. Clarke (1978), took a similar rather open view of the relationship between levels of material culture and those of linguistics, social organisation, and genetics, since they have 'arbitrary horizons of unspecified dimensions'. Although he denies any one to one relation or correlation this did not mean that there was none, only the greater complexity.

Unfortunately when Franklin uses terms such as random change, or directionless, assuming no causality, it tends to mask the complexity and leave her open to criticism. I do however have sympathy with her argument for assuming an open definition of the relationship between style and social/cultural activity, which the stochastic concept gives, in my own conclusions later I will show some affinity to her suggestions.

It is Vastokas who takes us beyond grouping and isolated images.

" --- avoids these arbitrary classifications, recognises that the study of rock art is not limited to the identification and charting of isolated pictorial designs, elements or so called morphs, but necessarily takes account of the positioning of those images on a particular site, explores the physical and even psychological character of the site itself, examines the geographical relation of the site to the wider geographical setting, and investigates as far as possible the significance of the site and its images in the context of its archaeological and ethnographically known culture --- the investigator brings to bear whatever interpretative forces he can muster upon his elusive data" (1978, 22-23).

With my later spacial analysis of the Cup and Ring marks, and reference to various disciplines of study, I think I tend to echo some of Vastokas ideas. ,

## The Chronology and Dating of the Natural Rock Engravings of the British Isles and Galicia.

In this chapter I wish to assess some of the ideas and evidence that have been put forward for the chronology and dating of the Natural Rock Carvings -Cup and Rings, in N.England, Scotland, Ireland, and Galicia. To further this aim some reference to the Megalithic Art of these areas and France will be helpful. The conclusions will be, first, that the origins of these carvings may be Neolithic and hence earlier than has often been assumed; and secondly a more analytical approach and detailed comparison between sites might be more profitable than much previous generalising.

### General Methods for Dating Petroglyphs.

Before looking specifically at the dating of the Cup and Ring engravings in the British Isles and Galicia, I will briefly survey the various methods that have been used to try and date prehistoric rock engravings in general. I see it as one of the most problematic areas of rock art study, and the area which might be said to limit much progress in the field. There are very few sites in the world where a chronology has been established in any detail and with conviction. An exception is the area of Val Camonica in Italy where the huge wealth of clear images and many superimpositions as well as

a large variety of form and style has lead to the establishment of a detailed sequential chronology.

In such a situation as Val Camonica where there is a wealth of images and superimposition, styles and images being virtually layered, one can claim that it is possible to use similar archaeological methods as 'type form analogy' and 'find combination' which are well discussed by Bo Graslund (1976), although his feeling is that an undue emphasis is given to chronology in archaeology at the expense of other perspectives. Nevertheless I feel that one should not ignore the importance of dating as a means of relating various material remains to a common epoch and possibly a common culture.

The situation at Val Camonica can be seen to some extent as an ideal one for the dating of Rock Art; thus I feel it is useful to look at the method, and then see how other situations force the observer to deviate and try to find other approaches to dating. The Cup and Rings do not appear to have similar characteristics to the engravings at Val Camonica, and therefore they are not easily open to the method of dating and chronology that is used there; but it is just possible that if a reliable typology could be developed for the Cup and Rings, and one or two key stones with superimpositions were discovered the method might be to some extent applicable. Because the chances of these appear to be rather remote at present, I will not dwell for long here on the Camonica material and method.

When groups of engravings in a distinct and common style are superimposed upon another group of clearly different style and development, we have reason to conclude that the second style was from a later date, although of course the length of time is quite open. The more times this situation occurs on various rocks the more certain we tend to become. This layering and superimposition may involve a number of styles, but if there are enough images and examples of various superimpositions a sequence can be formed. If within these sequences various figurative items such as weapon, tool, cart, etc. can be identified and dated as material objects, then the sequence as a whole can be fitted to an actual chronology. This was the process at Val Camonica.

Although not so complex as Val Camonica, the wealth of images in the Coso range in California was dated by a similar process, (Grant, Baird and Pringle 1968, 43-58). The actual dating was achieved by the change from the atlatl to the bow and arrow in the images; this was a change dated by other means in another area of study, Farmer (1955). Nevertheless the assumption that the atlatl and bow and arrow did not overlap in time and use as images can of course be questioned.

Any development of a type or style involves a subjective decision. Empirical material is capable of many different forms of grouping and classification to fit various theories - thus it is essential that all the criteria used for the defining of a style is

made fully explicit. It is a question I deal with more fully under methodology.

Two other approaches to the dating of rock engravings are, first, petroglyphs found on the undersides of cist covers or stones within a cist or grave, where some of the contents can be dated by radiocarbon, (see Simpson and Thawley 1972), or second, petroglyphs found buried below undisturbed stratification which contains datable material. A good example of this is the Mud Portage site in Ontario, (see J. Steinbring, E. Danziger, and R. Callaghan 1987). By this method the earlier date for petroglyphs in this region was confirmed as approximately 3000 BC, a few thousand years earlier than previously assumed. Flood (1987, 96) gives a good example of this form of dating in her paper on the work at the Koolburra region of North Queensland. Pits (Cup marks) and other engravings were found 30cm below the current ground level on the back wall of the Green Ant shelter. Charcoal from the deposits above the engravings gave a date of 1570 $\pm$ 60 BP, but assuming that people do not usually engrave on a wall at a height below knee level, a considerably earlier date would be likely. Thus the limitation of these two methods is that they can only confirm the latest possible date of production.

Seriation, which can be seen as a variation of 'type analogy' and 'find combination' methods, uses relative frequency of artifacts to indicate change. It has been used in rock art by Thomas R. King (1978) on work in Baja California for a preliminary trial study. There are however general weaknesses with the approach, since frequency of



types in a dwelling area or site does not allow for variation within the site or differentiation within the society. This criticism may well apply to the use of the method on a petroglyph or rock painting site, in the sense that one would be assuming that the dominant most plentiful forms or style were representative of the culture as a whole, as opposed to a group or part within it.

Attempts have been made to date engravings by using lichen, desert varnish, and other patinas on rock surfaces, although even if successful they would be only applicable in certain areas. Working from the assumption that lichen is removed when an engraving is made and then reforms, the possibility of dating presents itself.

G. Folmen (1961) has used lichenometry to date the Easter Island statues, and R. E. Beschel (1961) used it on an Eskimo site. However there are many problems to obstruct its use in rock art. There are a vast number of different lichens, and the rates of growth need to be known; the factors determining rates of growth are not widely known for species or area, and as R. Weisbrod (1978) notes areas of about 100sq. m. are necessary to be statistically valid. Weisbrod also looks at the possibility of radiocarbon dating such coverings as staligmatic growths. Work has also been carried out on dating the tufa covering of some engravings, but the results are strongly disputed, (L. A. Wilke and P. J. Wilke 1978). Recently considerable success has been claimed in dating engravings from the desert varnish covering them (Nobbs and Dorn 1988, 108). Other work has been carried out on various rock patinas (Bednarick 1980) but with no great success.

Few of these methods are usable with the Cup and Ring engravings of the British Isles or Galicia. A feature of these engravings is the absence of superimposition except for the very occasional possible example such as the carving at Fowberry Moor (fig.F8). Some examples and sites such as Achnabreck (fig.A1,2,4,5,7-10) have at least 50 Cup and Rings on the lower uncovered area, but this is exceptional, and most sites have far fewer forms. In addition as I will look at more closely later in the thesis, attempts to define differing styles is quite difficult. Thus any attempt at relative dating between forms or styles is likewise very difficult.

As stated previously some Cup and Rings are found in cists accompanied by datable contents, this gives a minimum age for them and is one of the few definite dating methods available.

Thus the approach to a chronology or dating for the Cup and Rings is far from easy and needs a very careful and wide examination of a number of possible clues, especially in all cases of association with other more datable items. To do this a further delving into the literature both past and present is necessary.

#### Earlier Ideas on Dating.

One of the most comprehensive works on the Scottish Prehistoric Rock engravings, written in the last century but

equating to much of the work on the subject since, was that of Sir James Simpson. We have looked earlier at his work in general; he collated a most thorough descriptive corpus of sites which has been used by more recent writers on the subject such as D.D.A. Simpson and J.E. Thawley (1972). What is perhaps more interesting is that he was writing over 100 years ago and well before our modern dating techniques, yet his broad approximations of dating and origins seem to set the pattern and parameters of discussion which still hold sway today, although now supported by some pinpointed radiocarbon dates.

At first in his paper Simpson leans heavily on a current dominant theory of his day regarding Phoenician trade routes from the Mediterranean via Iberia to the British Isles. These assumed connections have played a strong part in a number of discussions during the past century, such as Coffey's (1977) favouring of Mediterranean influences on the development of Boyne Art, which was to be disputed by Breuil (1934) and others in favour of Portuguese and Galalician influences. However later in his paper Simpson becomes more sceptical of these Phoenician influences, one of his points being the lack of engravings in Cornwall and west England where one might expect them. So he moves to the possibility of more local origins, and in doing so approaches the more recent ideas of Simpson and Thawley (1972). He follows by making the important point that forms which originate for a deep specific cultural purpose or religious reason may well continue in use long after the culture or religious changes.

Looking more closely at actual dating, Simpson works his way back by discussion to pre-Iron Age, and to what he terms pre-Celtic, until he concludes that it is,

"---not improbable therefore that the race of Megalithic builders whether Celtic or pre-Celtic, who had tools of polished flint and stone, first sculpted our rocks and stones with rude and archaic cups and rings. But the adoption and even more extended use of these forms of ornamental and possibly religious symbols passed down in all likelihood ----- to the inhabitants of the Bronze Age with its era of cremation and urn burial, and thence onward to other and later times " (1864-5, 110).

I would suggest that even after 100 years this view is more useful than the information that appears on many official sites, which limits Cup and Ring carvings to the Bronze Age.

Between Simpson's time and today many papers have been written on the British engravings, most as we have seen earlier contributing at least useful descriptive work. Many do mention the question of dating, but as one might expect only rather broad generalisations tend to appear. These are usually based on associations, such as hill forts, barrows, or other graves in the vicinity which contain some clue to their age; or somewhat more precisely when the carvings are on cist covers, or actually inside cists or graves then dating is again according to contents. Of course it is only more recently that contents have been dated at all

accurately by radiocarbon dating, but even then we can only assume the latest possible date of the carving providing that it is sealed in the grave.

Baildon writing in 1909 comes close to Simpson in his ideas on dating, by a rather intuitive method. Since for him the carvings show no evidence of Bronze Age ornament, they must be earlier and then adopted by the Bronze Age later!!

A similar rather weak approach to dating is found in E. R. Newbiggin (1932) on the Lordshaw carvings, in spite of the useful descriptive work. Since there is a Bronze Age cist only 22 paces from one carving he claims a 'clear association', and this leads to his broad dating.

Raistrick (1935) writing on the rocks of North Yorkshire makes an interesting attempt to classify the stones into three broad groups, to which he then gives a rough chronology, again by association. He suggests that the rich complex compositions on the edge of the moor such as the Panarama rock or the Badger rock (fig K6) are all examples of full cultural integration and vitality. They are free of associated remains, but he sees them as the earliest examples. The group on Burley Moor with a greater mixture of forms and a less impressive siting along the ridge is his second group. Finally on Baildon Moor Raistrick suggests that one finds the decadence of the cult in its later period, with the simple random distribution of undeveloped cups with few embellishments and in

association with later Bronze Age grouped barrows of the high plain. Although his dating does not take us very far, he does present a novel approach to the simple Cup marks. He sees them as devitalised versions of earlier richer forms, whereas the common idea is to see them originating earlier, (Piggott 1954 ). Another interesting aspect of this paper is that it is one of the few attempts to classify the carvings or sites in any way, by the symbols.

The recently published excellent corpus of the carved rocks on Rombalds Moor by the Ilkley Archaeology Group (1986) mentions the ideas of some of the authors that I shall refer to but makes no attempt to develop new ideas of its own on the subject of dating.

There are many other earlier works that one might refer to, but most whilst admitting the difficulty of the dating task, settle for a Bronze Age period.

It was about the same time as Raistrick's paper that the Abbé Breuil (1934) gave his address to the Prehistoric Society of East Anglia. This work was described in the earlier chapter but will be summarised now since it is so relevant to discussions of chronology, and not only expands the discussion by making comparisons between Natural Rock Art and Megalithic Art, but also includes references to the Natural Rock Art of Galicia. He makes the important move , which is followed by more recent works, of distinguishing between various forms and groupings of forms

especially those that are more common to Megalithic art, such as the lozenge, chevron, zigzag, spiral, (fig. K2, 10, L6, ); and those on the natural unmoved rock surfaces, which are usually based on the variations of concentric circles and cup marks, with occasional spirals or labyrinths. (fig. A1, 5, 7, ). The two groups are not absolutely autonomous since on occasions mixed groupings are found; this is especially true in Galicia, where Megalithic forms are found blended with Cup and Ring forms on the natural rock surfaces. Both forms can be found mixed on some of the rock slabs of the Boyne graves, especially the non-visible slabs at Newgrange.

#### Dating by Means of Comparison with other Engravings.

Breuil claims that there are many common forms in the Megalithic Art of Iberia and the Boyne, but also forms that are specific to each. For him most round forms are 'occuli', originating from the abstracted human face (fig. P2, 3, ), but the more straight lined forms such as lozenges or triangles are later, and possibly of Scandinavian origin. Breuil supports this by claiming that in places at Newgrange they appear to be superimposed on other forms, a point I was critical of in the chapter on the Literature. Following from the 'occuli' theory Breuil has a dominating tendency to read almost any form as anthromorphic. Most triangular shapes or wavy lines on Iberian orthostats are seen as related to the Almerian bi-triangular feminine idol. He also attempted to show parallels between the Iberian and the Irish and Scottish Cup and Rings, by claiming

similar anthromorphic origins. As Shee Twohig (1981, 17, 97, 120) states, his ideas have influenced many scholars, however she herself opposes his views, claiming that many of his drawings were inaccurate and overstressed the elements which he claimed as anthromorphic. Again in this case the critical work of Fleming (1969) is relevant.

Stemming from Breuil's 1934 work, as I have stated, is the distinction between Megalithic art forms and the Cup and Rings on the natural rock. It was really MacWhite's (1946) paper which again emphasised the two groups and used them firmly in his discussion.

As I mentioned in my first appraisal of his work MacWhite (1946) saw both groups as originating from Iberian influence; he claimed that the Cup and Ring carvings of Ireland came from similar natural rock engravings in Galicia. When looking at the English and Scottish art he admits a possible direct influence from Galicia, but suggests that an influence of the Irish on the English and Scottish is more likely. Since the forms frequently found on the cist slabs in England and Scotland are a mixture of Megalithic forms and Cup and Ring, he also suggests an influence of the Irish Passage grave art on the natural rock carvings of England and Scotland. We can I think find little firm dating evidence for this idea, but at the same time little to contradict it.

The misfit for MacWhite is the spiral which is common to the Irish Passage grave but quite rare in the Iberian peninsular; it



also appears in a number of cases on the natural rock sites among the British carvings. Thus as MacWhite (1946,65) states this may point to an indirect Mediterranean influence or connections with Brittany, where the spiral is common in a passage grave like Gavrinis. This does seem like arguing from the special example, since although the spiral is present at Gavrinis, due to the halving of many forms it is often difficult to say whether the forms are half spirals or half concentric circles, and the spiral is far from common in other Megalithic art in Brittany. The art of Gavrinis is quite exceptional, it stands out from all other Megalithic Art in Brittany from all aspects, quantity, craftsmanship, and overall conception, and would seem to invite specific study and understanding.

Important for MacWhite, as for Breuil (1934), and Piggott (1954), is the influence of Iberian Art Mobilier. MacWhite sees this Art Mobilier as falling into two groups of different styles.

"One group represented by certain ceramic types and cylinder idols is almost identical with the normal rock art " (1946,67).

These forms can also be seen on the decorated bones, (fig. P3)

"Another group represented best by the schist idols has an elaborate geometric art consisting of triangle zigzag herringbone and cross hatched designs," MacWhite (1946,67).

The second group of designs is the one that MacWhite sees as influencing both the designs on Irish Early Bronze Age metalwork, and the Passage Grave art such as that at Newgrange. (fig.K10) the ceramic and cylinder forms as having an influence on the evolution of the Cup and Ring, and the triangular and zigzag shapes of the schist idols affecting Megalithic Art especially the Boyne. (fig.P2,3). The difficulty of finding such formal affinities and then making assumptions is that it is equally difficult to disprove; it becomes virtually a tautology, unless other evidence or data is available. I dealt previously with this question in the chapter on Literature when looking at Breuil's work and the Mother goddess or 'Occuli' theory.

The origins for Irish Passage Grave art suggested by MacWhite (1946) are said to be found in the tomb and rock paintings of the Iberian peninsular, and even more in the Iberian Art Mobilier. However he claims that only broad suggestions for dating are possible, and gives an Early Bronze Age date for the Passage Graves, and from evidence at Loughcrew cairn H he sees the art still 'pure' during the Early Iron Age; MacWhite's estimates were made before the radiocarbon dating at Newgrange and other sites. Meanwhile, the dating of the Cup and Rings MacWhite found more difficult. Evidence of double looped palstaves amidst Iberian engravings suggest a Late Bronze Age, but Mediterranean analogies and Food vessels in cists in Scotland suggest a Copper Age or Early Bronze Age as nearer the truth for him. We can see that two problems are appearing here which MacWhite does not really face. First is the need to classify the

natural rock carvings of Galicia, and secondly to examine critically the idea of Galician origins for the British Isles Cup and Rings.

Piggott (1954) continues Breuil's (1934) and to some extent MacWhite's views. He strongly emphasises the parallel between the Boyne art forms and those on the Spanish schist idols or the bone ornaments of Almiraque, Leisner (1943) (fig. P2, 3, ).

#### Dating the Galician Engravings.

At this point before continuing with other work which critically analyses MacWhite's paper, we should refer to any evidence that exists for the dating of the Galician engravings, since as we have seen they are suggested as origins for those in the British Isles. We will find that it is necessary to go beyond MacWhite's simple classification into two groups, Passage Grave and Natural Rock.

Anati (1968) suggests five categories for the Natural Rock engravings of Galicia. The oldest is the Archaic, 6000-3500BC, a figurative tradition from the Epi-Paleolithic. This to be followed by the stylised figurative, both on the Natural rock and the Megaliths, of 3500-2000BC. Third comes the period of Idols and Weapons, 2000-1500BC, followed by Circles and Lines or Cup and Rings of 1500-900BC, that is Mid or Late Bronze Age, and finally the geometric forms of the Iron Age, 900-100BC .

The first point to notice is that if we accept Anati's dating, the Cup and Rings are too late to be influential on the development of those in the British Isles; especially when we come to consider a little later the earlier dates proposed for the British Isles by Simpson and Thawley (1972), Haddingham (1974), and Walker (1974). However looking at more recent work by Garcia Alen and Pena Santos (1980), one finds a considerable difference to Anati's view. The circles or Cup and Rings begin at approximately 2200BC, earlier than Anati's date; they are seen as virtually contemporary with the Deer forms, whilst Idol forms begin at 2200BC and end at 1700BC, see on the left of my fig. I, 7. Weapons are dated from about 1800 to 1100BC. They can be dated by style and technology as I mentioned at the beginning of this chapter, then from superimposition examples they can lead on to sequences. As we saw this has been invaluable for dating at Camonica Valley in Italy, and to some extent at Mt. Bego in France. The dating of identifiable weapons has also been used by Alen and de Pena for their chronology of Galicia, (1980). In addition recent analysis of previously known rocks, and newer discoveries by Alvarez Nunez (1982) suggests that Deer figures and Concentric circles are contemporary, thus casting doubts on Anati's sequences. Nevertheless there could be a large temporal difference between the various compositions, such as those with large complex arrangements of Cup and Rings with no zoomorphic forms (I1, 2, ), and those where the two types of forms - zoomorphic and circles are mixed and closely integrated (fig. J5, 7, ). Alen and de Pena (1980) also offer other evidence for an earlier dating of the Cup and Rings in Galicia, that is the finding of smallish rock

pieces and larger slabs with concentric ring forms used as building materials and foundations under the walls of three castros.

Unfortunately there seems to be no precise date offered for the castros, but from this Alen and de Pena conclude that the carvings

"-- were engraved earlier than the summit phase of the Castexa culture" (Alen and de Pena 1980, 139).

They attribute them to just before the Bronze Age and continuing through all its stages.

Therefore it might be seen that Anati's chronology relies too heavily on the background theory that prehistoric man's formal expression usually evolved from figurative 'realism' towards the abstract and stylised. This view was shared by Breuil (1934) and Hauser (1962) among others, but was well questioned by Leroi Gourhan (1965), and more recently by P.J. Ucko (1977).

Alen and de Pena (1980, 139) give us in their diagram a date of 2200 bc for the beginning of Cup and Rings, and 2500bc for Megalithic art. Unfortunately they are unclear on the basis of their dating, whether calibrated or not. Shee Twohig (1981, 22, 122) claims from evidence at the Beira Alta megalithic monuments, that Megalithic art was being practised around 3000 BC, although she stresses that this is an uncalibrated date. The usage of bc and BC is clearly confusing in all these discussions.

Connections between the Galician/Iberian Engravings and those of the British Isles.

At least three more writers have constructive comments to make on the connections between Galician/Iberian rock engravings and those of the British Isles. (Simpson and Thawley 1972, Walker 1974, and Haddingham 1974), although their sources for dating are similar.

First at this point it is useful to clarify again that simple Cup forms on their own need to be excluded from further discussion, since as can be seen in Alen and de Pena's work (1980) they span from before 3000bc to Christian times. In England they are known to have existed either contemporary with or earlier than, the long barrow at Dalladies, (Piggott 1972). It is a point that I dealt with more fully in the chapter on the Literature when discussing Romilly Allen's work.

We have seen that Megalithic Art in Iberia is dated earlier than the Cup and Ring natural rock carvings, but Simpson and Thawley (1972) in their paper cannot easily isolate an obvious chronologically earlier group in the British Isles. From their examples of cist covers, two have Beaker associations, (Carnwith and Catterline), and both these have Passage grave forms on them. However a number of other cist covers are also associated with Food vessel internment. Simpson and Thawley find more definite dating for the earlier dates of the Cup and Rings at the Boyne, where examples of the Cup and Ring style are found at Loughcrew, Knowth,

and most important at Newgrange (fig. K1, 5, 8, 9, P1, 4, 6, 7, ). At Newgrange they are found hidden on the backs of various kerbstones such as K4, 11, 13, 18. They are also found on corbels of the passage roof. Co 3/R 4-5 had the Cup and Ring facing upwards, but it was partly covered by roofslab 3 resting on it. Passage roof stone X had seven or more concentric ring symbols on the underside, but it is difficult to know if they all had central cups, this is also the case with some of the other Cup and Ring or concentric circle symbols (O'Kelly 1982, 154-185). These Cup and Rings may have been executed during the construction of the passage or of course earlier, giving a date of at least 3200BC. Both O'Kelly (1982, 230) and Shee Twohig (1981, 104) give an uncorrected date of  $2475 \pm 45$  bc as the date for the charcoal from the burnt 'putty' fill in the roof of the passage. At Knowth Cup and Rings appear on the orthostat 8 of site 14 and kerbstone 6 of site 12. Dating of site 2 at  $2208 \pm 126$  bc and of site 16 at  $2449 \pm 67$  bc is given by Eogan (1984), whilst he gives  $2455 \pm 35$  bc from charcoal at the base of Knowth 1 (1981 177). Earlier dates were obtained from the dark earth under site 17,  $2925 \pm 150$  bc and  $2845 \pm 185$  bc, but there can be no guarantee that this material comes from the date that the tomb was built. It is the Newgrange dating that becomes all important for Simpson and Thawley (1972) Hadingham (1974) and Walker (1974). It does of course also support some of the estimates of people like James Simpson (1864-5) and Baildon (1909) etc, 'that the Cup and Rings stem from an earlier magico-religious cultural tradition than the Early Bronze Age---.'

Simpson and Thawley (1972) are then faced with the problem of whether Passage Grave art and the Cup and Rings were part of a single cultural heritage from 3200BC or earlier, but were used in different situations or functions: or whether the Cup and Rings were a separate tradition which for some reason occasionally intermingled. It is still also possible that the Natural rock art was a later development, using Cup and Ring forms for a different function, and in a different context.

The earlier dating from Newgrange does seem to make continental European origins more difficult to support, although in addition to Spain, examples of concentric circles can be found in Sweden, Norway, France, Germany, Switzerland. Simpson and Thawley (1972, 89) point to the association of Cup and Rings in Galicia with hafted dagger motives and headresses similar to Corsican Menhirs, or Shardana in Egyptian paintings; this would make them too late to be ancestral to the British. 'In association' can be misleading, contemporaneity really needs to be shown. Certainly the dating of about 2200BC for the Galician Cup and Rings by Alen and de Pena seems to support Simpson and Thawley's scepticism, but we must remember the confusion about calibration over this dating. It is still necessary though to bear in mind that this is the date for the particular examples in the house foundations, earlier dates are always possible, so the question can remain open. To most viewers the great affinity between the big compositions of the Cup and Ring forms in Galicia and the British Isles is too remarkable to deny any connection at all; it is not only the affinity of individual forms



but an affinity in many of the groupings and use of the forms; compare fig. A2,8,9, with I1,2. Following from these points Simpson and Thawley (1972) suggest seeing the British group as primary, and the reflexions in the North and Central Europe stemming from trade, but they are still left with the question of the Galician affinity. Possibly the table is turned and Britain could be seen as ancestral to Galicia, but evidence of trading links etc are not very profuse.

Hadingham (1974) has sympathy for this last possibility. He claims that axes on the Galician rocks show a similarity with northern models, and some isolated finds of swords, maceheads, and golden ornament suggest a northern influence. The deer which often accompany the Cup and Rings in the Galician carvings, Hadingham sees as firmly rooted in ancient Iberian traditions of Rock painting (fig.J7), and thus it is perhaps surprising that they do not appear in the British Isles examples, if they were strongly influenced by Portuguese or Spanish settlement. He seems therefore to favour the indigenous nature of the British Cup and Ring carvings, owing little to outside influence, but possibly influencing others.

Walker (1974) also takes the Newgrange date as his starting point, and suggests that the Cup and Ring could well precede the Megalithic Art.

Regarding Galicia Walker, like the Spanish writers previously referred to, rejects the Breuil and Anati view of form evolution from figurative to abstract, and with more recent evidence sees the

possibility of the Galician Cup and Rings having Neolithic origins, as those in the British Isles. Walker does look more closely at variation of composition and association, as opposed to just form types, and notes that Cup and Rings in Galicia may make major compositions as in the British Isles, but at other times be contemporaneous with zoomorphic, idoloforms, weapons etc. (fig. I7, J4, 5, ). His suggestion that the 'purer' Cup and Ring sites were earlier is useful, and since they tend to be more concentrated around the coast a connection with Britain cannot be ruled out. (map p. 270.) ). It is possible that later cultures diluted the older forms that they received with additional symbols; this could then fit with the Alen and de Pena chronology. Whether sufficient superimposition has been found and examined in Galicia to verify some of the sequential events I doubt, as superimposition is not common. The possibility should exist starting from the fixed dates of identified weapons, but the situation is certainly far more difficult than for example the Camonica valley.

#### A Closer Analysis of Cup and Ring Engravings and Megalithic Art.

As we have seen, Simpson and Thawley, Walker, and others use the appearance of Cup and Ring symbols in the Irish Passage Graves, as evidence for the origins of the carvings on the natural rock. It is therefore useful and necessary to discuss this connection in more detail.

It is probable that the defining of most British rock art as 'abstract' has led to far more generalising and lack of specific analysis than has taken place in countries where 'figurative' forms are found. For obvious reasons observers feel that they can identify less and explicate less in situations of wholly abstract form. As I stated before this reaction is probably quite unfounded since what appears as figurative form may be acting in a completely symbolic way I am therefore suggesting the need for a much more systematic analysis of the British Cup and Rings, especially the major sites which include more than two or three forms.

It is quite true that one can easily identify the major components which contribute to the formation of the common forms which appear on most rocks; this has been illustrated by Morris (1977) and Beckensall (1983) However the rich variety of British Isles carvings comes from the way in which the forms are combined, the spacing and scale, it is this that gives individual rocks their own identity. Here I must disagree with Simpson and Thawley when they state

"-- apparent lack of an organised arrangement in their positioning " (1972, 99).

and also with Walker when he states,

"--All are characterised by -- a disinterest in patterns and formal arrangement of motive -- " (1970, 30).

I would not wish to insist on formal arrangement but a concern over arrangement should be an empirical question, applied to various rocks, I will return to this important question later in the thesis when looking at structure.

Almost at random I will choose three quite well known rocks for comparison, Achnabreck I (fig. A1,2,4,8,9,10), Kilmichael Glassary (fig. B5,6,7, and P5), and Doddington Moor, (fig. D1,2,5). The first two are only approximately 4 miles apart, and the latter much farther away in Northumberland. All are labelled Cup and Ring carvings since they have the common factor of using cup marks and the circle in their compositions. However I would like to state quite strongly that they differ visually a great deal as images, and hence possibly in meaning, cultural background and dating. The comparison I will make is not comprehensive but enough I hope to illustrate my point.

All sites are or were on open moorland, the two former have had sea views, and slope in a similar direction, up to 20 degrees, whilst Doddington Moor is well inland, almost horizontal, and at a higher level.

The question as to the extent of forestation at the various sites during the late Neolithic or Early Bronze Age, tends to be unresolved. Simmons and Tooley (1981 200) claim when referring to the Neolithic,

"The extent of forest cover is of course one of the key elements in an environmental reconstruction, but when it comes to detail both the range and the nature of the evidence fail us."

Nevertheless certain relevant points come to light. The range of the high altitude bogs appear to have been increasing with the development of peat. Many clearings were appearing of a long duration, but also some forest regeneration around 2600-2700 bc. Thus as Simmons and Tooley (1981,207) state, the likely picture of the Neolithic landscape is that of a mozaic. We can note however that forestation when it did occur in Scotland, was the open form of pine and birch, including many clear patches and scrubland. At the start of the Bronze Age the national picture was still one of a forested land, but with marked regional reduction; and using evidence from pollen diagrams it appears that high altitude woodland was already being thinned out. From this I think we may conclude that with Cup and Ring sites at a higher level and with open views, there is every possibility that these views were present when the carving took place. Even if there was forest in the vicinity it was likely to have been thin with scrubland and well sprinkled with clearings.

Looking first at Achnabreck I (fig. A2,7) the dominant symbol is the cup with concentric rings, but often in conjunction with separate cups. The scale of the Cup and Rings varies from the largest of 38 inches diameter, down to 2-3 inches, and rings may number from one to seven. Many have from one to three radial

grooves, often becoming runners leading out into space, or even joining other forms. Isolated cupules are also tailed at times. Spacing or grouping varies in a way that could well denote intention. The top of the rock A, Morris (1970, 33), has a concentrated grouping and includes three unusual symbols, the double ended spiral (fig. A5), the clover leaf spiral, and the cup and single ring with three parallel tails. (fig. A7). Even within this grouping other grouping of cupules and forms have taken place, which I feel could well point to intention on the part of the executor. This is confirmed to me, since most random form making, such as children's scribble, or adults' accidental work, leads to repetition but not great variety; variety of scale and spacing comes from intention.

As one moves S.W. down the rock forms become larger and spacing greater, with less use of the isolated cup mark.

Again on the lower parts, sections KLM for Morris (1970), forms become very concentrated and less well drawn, but many cups and concentric circles are up to 31 inches in diameter. Here the many radial grooves become 'long distance' runners and link many of the forms. Cup marks are used in complex groupings, at times with, and at times apart from the linked systems, and at other times in very distinct rows across the rock face.

Thus there are variations in the use of symbols, and in execution within Achnabreck, but the important point to remember

when looking at Kilmichael Glassary is that the Cup and Ring forms are not common (fig.P5). Although very near to Achnabreck, Kilmichael is a very different visual image, (fig.B5,6,7). Here one does not find the cup with more than one concentric ring, and this is usually gapped in a keyhole form. The scale of the symbols is far smaller than at Achnabreck, the largest cup being 9 inches in diameter, and 2 inches deep. Variation on the rock comes from the variety of cup marks, ie. extended or elongated to form a straight comma, or with one or more runners leading down hill, sometimes a dumbell effect by joining two cups together, or the key shaped single concentric gapped ring. Spacing and grouping has far less variety than at Achnabreck especially when comparing Achnabreck's higher rock face. At Kilmichael one can say that a more random effect is felt. However the variety in scale and form of the individual symbols would seem to denote intention, but perhaps leading one to identify at this site less emphasis on the all over 'composition' or placing but more on the making of the individual marks. One might well expect superimposition in such a situation, but this is not apparent, however cup marks as forms do not really lend themselves to superimposition.

Doddington Moor is a unique rock. (fig.D1,2,5) smaller than the previous rocks, approximately 10 by 5 foot at its widest parts. Its uniqueness stems from the fact that it has one of the few examples of rectangular and near triangular forms. As can be seen in the illustration the rock does have one major cup with two concentric circles, and two or three small cups with one ring, thus

giving it a formal relation to many other rocks including the two previously mentioned, but its other three major symbols give it the distinct difference. The single rectangle joined by a runner to the adjacent Cup and Ring form encloses ten cup marks, one of which has a tail which leaves the rectangle to wander across almost the length of the rock. Approximately 18 inches from this rectangle is the other, slightly larger and with three concentric sides, the corners rounded and enclosing 14 cups. The form is gapped with a tail. To one side of this rectangle is the more or less equilateral triangle with soft corners, and again enclosing this time 12 cups. The rock includes other small cup marks and grooves, plus the corner of another broken form, but enough has been said to give the flavour of the rock. Regarding grouping and spacing, it is far less easy to make a statement since there are fewer symbols than on the other rocks, and some damage and destruction has occurred. Nevertheless considering the factor of the enclosed cup marks, the joining of the Cup and Ring to the first rectangle, and the spacing of the other two forms with tails flowing in the same direction, intentional placing does seem to be suggested.

Emerging from this rather short comparison, I feel that with a much closer comparative analysis including not only the symbols and their associates but scale and space - the distance between forms, useful groupings of rocks may appear. More relevant to this paper I would claim to show that it is not just common symbols which indicate a connection between sites, but the total context is also important.



I think it is now useful to consider the Passage Grave symbols in a similar way to the above. We will find that often a Cup and Ring symbol can be found, but usually in a specific context which seldom equates closely to the use on the natural rock. As I have said before, it is important to remember, that the Cup and Ring does appear on the natural rock of many countries, (see E.N. Fell and P.Fell 1979 as an example for Norway and Europe). Thus I feel that it is only its context that probably gives it a specific identity, and indeed perhaps meaning to its creator.

Looking first at Newgrange, the Cup and Ring is by no means a dominant form. It only appears either informally or on the backs of Kerbstones (fig. K5, P1). More important for the question of dating is the Stone X from the passage roof, with poorly executed Cup and Rings hidden virtually fresh and undisturbed on the underside of the stone. (fig. P4). Nevertheless in none of these cases does the Cup and Ring appear to be an important form like the spiral, lozenge, zigzag etc. It is invariably hesitantly executed in conjunction with the above forms, and these other forms are seldom found on natural rock in the British Isles. This situation is echoed in most other tombs where carving is found. Either the Cup and Ring is an isolated example as in the passage at Dowth (fig. K1) or it is found enmeshed with other forms, which as I have said are usually foreign to the natural rock surface, for example the two rocks at the entrance to the passage of Loughcrew Cairn T (fig. K8, 9). On such rocks the Cup and Ring is bedded tightly with other differing forms, and not only are the accompanying forms very different to those on the natural

rock, but the spacing and grouping is far more concentrated and dense.

However, to be a little less sceptical, on occasions one can find the Cup and Ring used as a more dominant form, accompanied by repeats of itself and without other forms. An example is stone No 5 in the passage at Dowth (fig.K1) which only has one adjacent leaf form with it, or equally important the stone in the Tara Passage Grave (fig.P6).

An excellent example of the combination of Cup and Ring marks with the lozenge and spirals of Passage grave decoration, was found in the Pierawall Quarry, Orkney. The stone is presumed by the author to have been a lintel over the passage of the cairn (Sharples 1984); the author gives the dating 2600bc-2100bc for the cairn and claims links with the Boyne and Newgrange. However we are again left with great doubt over the stone, since it was not found in situ in the cairn, and since in our terms it appears 'broken' and the design interrupted, could it therefore have been reused and thus from an earlier date? Or of course it is equally possible that association with the cairn is incorrect, or occurred at a later date, by the stone being placed in or near it..See (fig.L6) but also (fig.I4) for an enigmatic 'cut off' form on a rock in Galicia.

Finally an interesting comparison of composition or grouping is the stone at the inner end of the Loughcrew Cairn T passage (fig.P7) compared with the Natural Rock site at High Banks, Galloway

(fig. C1,2,5, ). At High Banks the Cup and Ring is completely embedded in a tight texture of small but deep cup marks, at Loughcrew it is very similar but the central form is actually a spiral. However on the opposite rock in the passage one does find a smaller Cup and Ring embedded in a similar way.

I have tried to highlight the importance of context in the use of forms. Not only is this necessary regarding the relation between the British Isles Natural Rock Art and Irish Megalithic Art, but also I think necessary and useful for more closely analysing the Natural Rock Art itself.

In summary we are left with the fact that Cup and Ring symbols were used on rocks about 3200BC. They were used among a different family of forms to those used on the natural rocks, and thus had perhaps a different cultural meaning or function. Whether they were adopted from a contemporary sub-culture or an autonomous culture, or were the roots out of which the symbolic culture of the Natural Rock Art grew, it is not possible to state at the moment.

### Conclusion

To some extent as I suggested at the beginning one can see the wheel turning full circle on the question of dating, from James Simpson's beginnings to the ideas in more recent work, with some conviction and clarification gained from radiocarbon dating. We now

have a picture where there does seem to be a broad distinction in the use of form between the carvings on the natural rock in the British Isles and those found on the stones of the Passage Graves, although at times blending occurs. From association with datable tombs the Cup and Rings may well have come into existence at least before 2500bc or 3200BC, that is in the Neolithic period, and from evidence in souterrains, continued until 100AD or later. Much suggests that the British Cup and Rings may not be later than those in Galicia, thus the ancestry of these to the British is unlikely. Indeed a reversal might well be considered, or at least a parallel development with interaction.

We are left with basic questions. Since we do have some insight into the existence of the Megalithic builders and their symbols, how do the people who made Rock Engravings on the natural rock relate to these Megalithic builders, if, that is, they were contemporary? Were they a sub-culture or parallel culture, or did the symbols on natural rock have a different function to Passage Grave Art but within one culture?

We do tend to assume that the Cup and Rings continued into the Bronze Age, but as stated before this may not be based on strong evidence, and in most cases of dating such as cists or souterrains finished carvings could have been adopted. If however we do accept the more traditional view that most Cup and Ring carvings on the natural rock were made after 2000BC, and only had 'tentative' origins in the fringe ideas of Megalithic Art, then concepts are

easier since the Cup and Rings can then be fitted into a different and chronologically separate culture to that of the Megalithic builders. Walker and others when positing Neolithic origins may not it seems to me give enough attention to these basic questions.

One is left with symbols of a high degree of similarity which were used in all probability by man in the regions of the British Isles for approximately 3000 years, that is longer than the Christian Cross, but also it is likely by as wide a range of cultures or subcultures, and with as broad a range of meaning.

## Some Steps Towards a Structural Analysis.

### Theoretical Justification.

As can be seen in the previous chapter regarding past and present literature on the subject of the Cup and Ring engravings, the works tend to fall into two categories; they either remain at the level of pure description, or they describe and then make rather large unsubstantiated leaps towards imaginary or hypothetical meaning.

I would not wish to deny the importance of the first category, especially when carried out with the rigour and care of many writers who have been previously mentioned, but its limitations do seem to deny progress in the dynamic process of knowledge as I have stated earlier. Whereas the second category of wild imaginative guesswork also seems to lead to little progress of any substantive nature. .

In this final chapter I will be drawing upon a number of works from a variety of backgrounds and theories in order to attempt to look at the material of the Cup and Rings in a new way. I cannot claim by any means to reach a final explanation, or to offer the one definite approach to the subject. I am able to offer some new ways of looking at the subject matter and classifying it, I offer some tentative hypotheses, and also put forward some avenues for further study. In this way as I stated at the beginning

of the thesis, I hope to have made a small contribution to knowledge.

Following from the above, I will be looking first at work which suggests a more systemic approach, and helps to justify the concept that there are basic cultural principles underlying all parts of the social system. I will then refer to examples of other work which have generated approaches to symbolic analysis and grammatical syntax, with a special attention to the importance of space in this work. This will lead me to my own analysis of space, in relation to the Cup and Ring engravings. followed by a grammatical syntax. Finally I will suggest an approach to a typology for the Cup and Rings.

In my chapter on Art and Social relations, I illustrated and examined a functionalist approach to the analysis of art or visual images in society. I showed the inevitable complexity of this position leading to concepts of 'multi-function' or 'multi-causation', and also the theoretical weaknesses. I mentioned that other approaches are possible, such as the work of Munn (1966, 1973), Faris (1972, 1983), or Washburn (1983).

To me it would seem that once one moves towards the concept of a 'multi-functional' situation one is part way to structuralism or a systemic theory, since one is assuming a network of relationships between the parts of a society or culture. It is this direction that I wish to explore in this chapter.

I suggest that theories *per se* are not necessarily right or wrong, but can be seen as tools with varying degrees of explanatory power in different situations. In the earlier chapter a functionalist approach seemed useful for a critical social analysis of art. However I was using ethnographic material where the actors' meaning and definition of the situation was called upon in addition to the observer's evaluation.

The actor's definition is all important for Geertz. He claims that the analysis of the discourse and its meaning to be the main aim for Ethnography; and following from this tends to condemn other theoretical approaches, claiming of structuralism and others,

"---- we are left ---- with an externalised conception of the phenomena supposedly under intense inspection, but actually not even in our line of sight" (1983, 98).

Although I do not reject Geertz criticism completely, I feel his final phrase does go too far; especially since farther down the page he presents us positively with a work on the use of line in Yoruba sculpture, and the way in which it permeates the culture, forming what both Munn (1973), and F. Allan Hanson (1983), see as underlying principles.

Geertz is concerned with Ethnography. Although it is a helpful discipline for this thesis, the data of my work fall into the category of Archaeology, at least from the descriptive and



historical and chronological viewpoints, and here the actors' definition of the situation can never be known. In addition as we have seen there is the added handicap of imprecise chronology. Nevertheless it seems essential to try to push back the boundary of understanding using any tools that are available, whilst at the same time retaining as much rigour and rational logic as possible.

By no means does this lead one to powerless relativity; to return to Geertz again, this time for positive backing;

"I have never been impressed by the argument that as complete objectivity is impossible in these matters ( as of course it is) one might as well let one's sentiments run loose. As Robert Solow has remarked, that is like saying that as a perfectly aseptic enviroment is impossible, one might as well conduct surgery in a sewer" (1975, 30).

Geertz appears by no means constant about the supremacy of the actors view of the situation; he talks of meaning being intuitively sensed and not consciously interpreted (1975, 28); or at times shadow puppets can be enjoyed without the viewer explicitly interpreting its meaning.

This is in turn well supported by F.Allan Hanson, when analysing Maori culture he states,

"--- and the aesthetic response to it is a matter of feeling or intuition, which a person is hard put to articulate" (1983, 77).

Thus there may well be areas of social or cultural meaning, or relationships, to be understood, but which occur below the level of the every day actor's definition. By exploring these, progress can be made, even if we are inevitably denied a final ideal goal.

Lathrap in a most important statement summarises the position for a systemic approach to visual images,

"--- units of stylistic similarity can be viewed only as the result of networks along which artistic communication is intense. Such networks can only be viewed as the result of total social adaptation, ongoing repetitive process and notions of negative feedback. in other words a systemic model. Art as a communication is a subject of such complexity that it must be handled in the context of systemic models" (1983, 39).

The goal in an analysis will be to find the 'common denominator' of a culture, or the key to the shaping of the system. In the case of this thesis it will be to search for the principles underlying the culture or cultures associated with the Cup and Ring petroglyphs, starting from the engravings themselves.

In an earlier work Munn wrote,

"--- the designs function as visual models that present these principles as it were, directly for inspection" (1966, 946).

Further support for these underlying principles within cultures, can be found in F.Allan Hanson's work on the Maori culture (1983, 87). He places the concept in somewhat different terms, that is, that the relationship of any institution to the culture is synecdochic, meaning that the part recapitulates the whole. Therefore we may assume that if we only possess a fragment of a system, such as examples of visual design symbols, we may gain some insight into other aspects of the culture.

These ideas are found again in the work of M.J.Adams (1973), and in Bateson (1973, 105) especially with his concept of 'redundancy', claiming that the same message is reiterated or reinforced within a system in many ways and by many different media. Vogt (1976, 10) extends the idea beyond repetition in the various parts of the system to repetition in time, such as repeated ritual.

At this point we can assess the ethno-archaeological work of Hodder (1982). Looking at the Baringo, Hodder shows that whereas many aspects of symbolic expression conform to the culture and thus strengthen the boundaries, designs on calabashes, and the designs on spears, tend to diverge and thus disrupt boundaries. This is due to the internal male/female and young men/old men conflicts in society. Therefore it would seem possible to receive, in

archaeological material remains, designs which may be discordant to the society from which they emerged, due to such internal relations.

Nevertheless it seems true to say that this would be a deviation from the general rule of common fundamental structural principles. Even in Hodder's case of the calabashes we are given no details of these deviating designs born out of internal conflict. If analysed it may well be found that the deviation is at the surface level of observed embellishment, and it is possible that the structural principles remain constant and could be demonstrated. This point can be illustrated by looking at the Cup and Rings.

The structural principles and spatial characteristics of the Cup and Ring symbols stem basically from their concentricity around a specific point. I will be looking at this in more detail later in the section on 'space'. For the moment if we look at other artifacts which might be considered contemporary with the Cup and Ring marks at certain times, such as the Beakers, when looked at from the side any structural similarity to the engravings may not appear obvious. If viewed from the base the concentricity becomes more apparent; this is especially so with the Beakers that have the design continuing under the base (fig. LI, 2). Although in some cases the design may terminate on the base with a decorated cross, echoing the designs on some Irish gold buttons (D. L. Clarke 1970, 2, 298), in these cases there is therefore no centrepoint or cup

but the concentricity is still very much present (D.L. Clarke 1970, 2, 412, 414). There are only a few Beaker designs that have different structural features and concentricity does not dominate. see for example Beakers from Houghton Hunts, or Halstead, Essex (D.L. Clarke 1970, 2, 334). Even where strong geometric shapes are dominant the concentricity still exists (Clarke 1970, 2, 343). Looking farther afield the concentricity can be found on many food vessels (Abercrombie 1912, XLII, 233, XLIV, 237, 239). Similar structural features are found on some of the Durrington Walls pots (G.J. Wainwright and I.H. Longworth 1971), and even an example of the actual Cup and Ring symbol, but on others the concentricity does not dominate the design, verticals, diagonals, and strong infilling break up the space. Food vessel design tends not to be so refined as that of many Beakers, yet if we take into account the shoulder and other rims the concentricity is frequently strongly present. One could even suggest that if the concentric structural features are less strong as Food vessels continue over time ( and this appears so from Abercromby), it could illustrate a changing relation to the Cup and Ring symbols. This might indicate a weakening of interest in the petroglyphs and their symbolism. These are tentative concepts which stem from the ideas I stated earlier, but they would need much more detailed analysis and study, and do not figure in this work other than this identification of the potential for future study.

I will now turn to look at other artifacts that may have been contemporary with the engravings, such as the decorated domed

gold cylinder (fig. L3) in the Saint Germain en Laye museum, which has a very strong concentric structural design, or the gold lunulae for which Taylor (1968) suggests an early Bronze Age date. The initial shape of these does have a partially concentric base, and the neck would be the centre. Most decoration does not destroy this basic use of space in the design, but the dotted decoration of the lunulae found in Cornwall, Scotland, and Wales seem to support it more than most examples from Ireland. However an example from Ireland where the concentricity is exceptionally strong is the lunulae from Glenishen, County Clare (Torbrügge 1968).

Finally although there are other types of artifacts and structures we could examine in this way, at this point I will only refer to the strong concentric structures found on the Bronze Age shields such as that from Lough Gur, Co Limerick in the Dublin National Museum, or the fine example in the hall of the Society of Antiquaries, London, from Beith, Ayrshire; also the dress fastener from Clones, Co. Monaghan, and the Gold Gorget, from Co. Clare (the last two also in the National Museum, Dublin).

Thus although questions can be raised regarding the apparent distinction between the decoration on the gold artifacts, the Beakers, and the rock art (pers. comm. Prof. Eogan), I hope I have shown that a structural relationship may be present in many cases.

Basically the point at which we have arrived is to accept that if we have access to one part of a social cultural/system for

analysis, that is in this case the Cup and Ring engravings, it should be possible with certain reservations previously stated, to gain some insight into the structural principles which 'guide' or control' the system as a whole.

The next step must be the attempt to identify the principles underlying the society or societies and cultures, which must have been associated with the Cup and Ring engravings.

#### Some approaches to Symbolic Analysis

One of the inevitable questions that is frequently asked by 'the man in the street' when one introduces the subject of rock art, especially with images that appear to be non-figurative is, what do they mean? Presumably, what did they mean to the creator?

Many Sociologists and Anthropologists will readily admit how difficult it is to ascertain an adequate answer to such a question from contemporary human beings. To hope to find answers for images made many centuries in the past, begins to sound like an impossibility; it is a question that I discussed earlier in the thesis. This however by no means denies us the possibility of searching for explanations about other aspects of the subject, even if it is necessary to put the common question about meaning aside. As we have seen regarding the Cup and Ring engravings, questions

about dating and chronology can be asked, and some progress has been made. Questions about the relations between the engravings and other symbols and artifacts remain. Above all we have a body of data well documented which can be explored internally as well as looking at its external relations. Many aspects of the Cup and Ring symbols repeat themselves frequently, some things hardly ever occur, or only very seldom, such as shapes like triangles, ovals, crosses, or figurative images. Circles almost never overlap each other. As I have said previously, superimposition is almost unknown. Therefore I suggest that what we have to study is a rule-governed symbolic system; one consisting of limited shapes of varying sizes, lines, and equally important, spaces between and around them.

We are looking at a symbolic language that is governed by rules, but as with a spoken language the rules are not absolute, but will be broken at times. Similarly those who use speech are not always aware of the rules, they are not often in the forefront of consciousness. Faris (1972, 93) from working with the body adornment of the Nuba claims that they could seldom articulate the rules of the system of decoration, but could normally agree to the adequacy or inadequacy of examples which were presented to them.

In a symbolic system there will be certain possibilities of composition or construction which will be in the artist's mind, out of which a particular design is created. There will be an infinite number of other possibilities which will not enter his mind, or



will be seen as inappropriate. I have indicated some of the design aspects that seldom or never appear with the Cup and Rings. One of my aims in analysing these petroglyphs is to attempt to define the possibilities that were in the creator's mind.

As I have stated above although any form of language, whether symbolic, cursive, or spoken, is rule governed; the rules are frequently loose, in the sense that they can be broken at times. Other factors may impinge upon these rules, such as extra strong emotional or even physical characteristics of the creator. Faris (1972) points out that although the system of rules with the Nuba permit certain designs, they are not used since they are not aesthetically pleasing. thus in a system such as the Cup and Rings, an unusual variation may occur that breaks or bends the general rules, due perhaps to the aesthetic or emotional needs of the artist. It is just possible that this could be the case with the rather unique design at Torrs, Galloway (fig. C6), or the near triangle at Dod Law, Northumberland (fig.D1). An example of variation from the general rule can be seen in Galicia from the deer images. In the majority of cases the deer nuzzle or just touch the outer circle of the Cup and Ring symbol, that is unless they are completely detached; but a few images can be found where the animals do partially or completely enter the concentric circles.

Thus in the first place it is necessary to define the logic of the generation rules, but finally it may well be necessary to

accept them as probabilistic, and to allow for such a variable as aesthetic taste, either that of the artist or of the group.

In any visual symbolic system there are the forms that are created, but equally important is the space that is enclosed within the forms or between them, and the space that is defined by the edges of the forms and their surroundings. This latter space may be unlimited, or limited by boundaries; in the case of the Cup and Rings, this is the edge of the rock. Farris (1972, 99) states that 'element spacing' is one of several semantic dimensions, but he pays it no great attention, although within the algorithmic process spacing with gaps of equal proportional distances are possible. In the next section I will be focussing in detail on the question of space in relation to the Cup and Rings, since I see it as being of equal importance as the symbols themselves in the formation of the system.

Unlike Farris, but more in keeping with Hodder's (1982) analysis of symmetry, Munn does identify basic formal structure within the symbolic system, and relates it to Walbiri culture and cosmology; and she emphasises the important role of the definition of space in the symbolic system and its underlying structure.

The two fundamental forms of the Walbiri, the concentric circle and the line or lines joining them, give the place and path between, or male and female. This of course has a very tempting naive attraction for one studying the Cup and Ring engravings; the

place, camp, or waterhole, is also the link between this world and that of the underground dreamings or ancestors, exits and entrances are via the waterhole. Without going too deeply into Munn's thorough work this leads to the unifying and communicating role of the visual images, 'gurnwari' and others; these are components of both the inner and individual person, and the outer social world of sense experience and social interaction.

"--- this necessary shift from inner dream to exterior reality suggests the importance of binding inner imagination to the outer social world, the inner self to the external order" (Munn 1973, 193).

In addition as I have said, Munn shows an awareness of spacial concepts in her analysis. She claims that one task of anthropologists concerned with aesthetic phenomena is the examination of differing spatial arrays.

The fundamental concept of 'coming out' and 'going in', which extends to inside and outside, is basic to Walbiri culture, it is,

"--- a general principle over the whole of existence to explain the structure and maintenance of the spatio-temporal order" (1973, 197).

This principle appears throughout the visual forms and is constantly reinforced and communicated.

Hodder (1982) takes Faris's work as a starting point for his generation of a 'design grammar' for the visual work of the Mesakin Nuba. He emphasises the Mesakin's concern over symmetry, and he does point to the important relations between the symbolism of the visual forms and the larger cultural system. Nevertheless although the basic principles of symmetry appear axiomatic to the Mesakin, Hodder's particular analysis and definition of the concept may need redefining with a visual system such as the Cup and Rings. This redefining of the concept of symmetry I consider very important to examine before moving to the section on space.

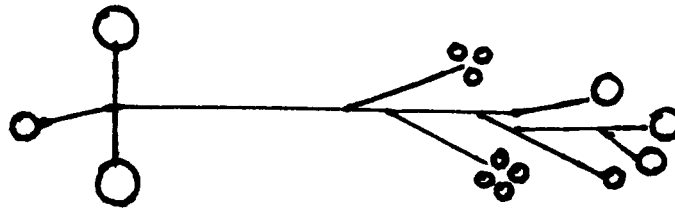
A concept of symmetry as continuous equal repetition may not be adequate for the Cup and Rings. The dictionary meaning of symmetry includes balance and harmony. This may well be achieved by inequality in some variables, giving equality in others. In the case of weight, one small heavy object may equate to a number of larger lighter ones of varying size. In colour, small powerful fields might balance the larger more neutral. Inevitably the use of space is relevant. In form two equal sizes will balance:-



but also



or more complex



It can then be argued that we are moving from the 'common sense' definition of symmetry, to a form of balanced asymmetry. If so it is important to realise that we have not necessarily moved into a process of random construction. We may still be within a rule governed system even if apparently more probabilistic; and one in which, as I have mentioned before, the use of space and relationships of size are critical.

#### Space.

We may now look at the subject of space with regard to the Cup and Ring engravings. There is first the great difficulty of not knowing for sure the size of the original complete rock, and the number of images in the group when they were first carved. Also there is always the possibility of later additions. Many remains do lead us to believe that they are fragments (fig.C8).

Man has been destroying inconveniently placed boulders or making building material from them for a few thousand years. First by heat and water, then by dynamite; a good example is the history of Avebury (Burl 1979, 37-56).

When one examines the large groups of Cup and Rings on the natural rock which appear to be unchanged, sites such as Achnabreck (fig. A2) (Morris 1977,27), or the Concho stone now covered over (Morris 1981,126); it then becomes extremely likely that many other finds are fragments. This is supported when part of a symbol is found on the edge of a rock surface, as is quite frequent. and is the case with the rock on Doddington Moor or Dodd Law which I discussed under Chronology (fig. D5). The collection of small rocks on the side of Newlaw Hill, Galloway (fig.C8) (Morris 1979,154), is a good example. However great enigmas can arise, such as the rocks at Chain-Gondomar, just south of Vigo (fig.I4). Here it is difficult to know whether the carver fitted an incomplete Cup and Ring onto the middle rock rather than cross the cracks, since other lines appear to continue across, or whether sometime in the past the rock has been fragmented in some way and then reassembled. The latter is not very likely since the rock is quite massive and penetrates the ground deeply.

The only other explanation for part of a symbol appearing on the edge of a rock, might be that only a small sized rock was available, and the spacing between symbols was as important as the symbols themselves. A reduction in scale of the symbols to fit the ground would seem a more logical solution, at least to us! These questions need not detract too much from my own feelings about the use of space, and intentionality on the part of the Cup and Ring makers.

With any irregular placing of symbols on a surface, the question can arise as to whether there is any intention or consciousness involved, indeed 'composition'. My own feelings from observing many different ages of art students over a number of years, is that contrary perhaps to expectations, when no thought is involved more equidistant spacing appears; I do not of course mean to absolute mathematical precision. For example if a child's scribbling is continued over a reasonably large area, regularity will appear. This is true also of an acclaimed artist such as Jackson Pollock during the 1940's in the U.S.A. He claimed the aim of trying to abolish conscious thought from his paintings, nevertheless a regular rhythm appears. Whereas I have tended to notice that more extreme variations in the placing of isolated forms, akin perhaps to starry night sky, comes after some deliberation and conscious thought.

In order to attempt a test for the above hypothesis, a number of teenaged children were given two simple tasks. First on one piece of paper approximately 12"x9", they were asked to draw quickly without thinking about it, twelve circles by tracing around 1"coins. they were informed that a symmetrical pattern was not required. Second they were then asked to repeat the activity on another piece of paper the same size, but this time they were asked to think very carefully where they put the circles, but again a symmetrical pattern was not needed.

By measuring the distance between each circle and its neighbour, then subtracting the minimum distance from the maximum for each person, a complete total figure for each test was arrived at; thought and no thought.

In one test there was only a 3% increase in variation for thinking, but in another over 100%, more than twice as much. It is difficult to explain the great difference, except that in much social science testing one's verbal 'orders' or 'requests' and keeping them constant is critical; and there are always many hidden variables. Nevertheless the results are encouraging, and provide some guidance in the examination of space within the Cup and Ring series.

Although the material makes precision difficult, for a rough comparison I used eleven of the sectioned plans of the Achnabreck rock given by Morris (1971, 33-37) excluding J as it only has two symbols. I assumed these were 'composed' with some thought, and compared the measured results with the 'unthinking' or random results of the two teenager tests. The results were 76% and 41% more variation in spacing than in a test where people were using random spacing and trying not to think about the task. If of course Morris had divided his site in another way the result may have been different, but I accept his overall divisions as the most logical.

These results seemed encouraging, and related to the experimental tests where definite thought had been introduced.



It suggests that the contrast between the Achnabreck rock and the random non-thinking tests indicate that thought, and hence intention was involved in the placing of the symbols, even if the uncontrolled variables are considerable.

I repeated the test at a later date, and with completely different children, five more times. The ages of the children varied from 12 years to 16 years. the number in the groups varied from 15-19. They were again asked to draw round 1 inch coins making 12 circles on a piece of 12"x9" paper, without thinking or worrying where they placed the circles. Following this they were asked to repeat the process taking great care and thinking about where they placed each circle, but a symetrical or repeat pattern was not required. The aggregate figure of maximum variation for each group was again calculated in the same way. The 'non-thought' and the 'thought' figures were compared. The results were as follows.

A The Test.

		<u>No. children.</u>	<u>non-thought</u>		<u>thought</u>		
			average		average.		
Test 1	18	156	8.7	234	13.0	+33.4%	
Test 2	15	133	8.8	199	13.2	+33.3%	

Test 3	18	151	8.3	186	10.3	+18.9%
Test 4	19	183	9.6	179	9.4	-3%
Test 5	16	197	12.3	235	14.7	+16.2%

N.B. The figures were measured in tenths of inches.

B Individual Details.

Test 1	18	11 above	3 equal	4 below.
Test 2	15	9 above	1 equal	5 less.
Test 3	18	7 above	4 equal	7 less.
Test 4	19	8 above	--	11 less.
Test 5	16	8 above	2 equal	6 less.
		-----	-----	-----
		43	10	33

N.B. Above or less refers to the 'thought' test being above or less than the 'non-thought' test.

As can be seen in section A, only in one test No. 4 was there more variation with the non-thinking, and this was a very small amount. The other tests showed significantly more variation with the thinking test.

It is interesting to look at the figures in another way as in section B. This looks at each child's papers, and counts in how many cases the 'thought' paper was above or below the non-thought, or when the two were equal. these figures probably appear as a less impressive result, however it is still true that in the majority of cases the thought has more variability.

I thought it might be interesting to continue the comparison with some other Cup and Ring sites, in the same way that I did with Achnabreck above. With other sites one only has one set of figures, and of course one cannot dictate the number of symbols. Rocks with only very few symbols are of little use, and as I have mentioned before there are a majority of these. I chose sites where the number of Cup and Rings are between 16-25, In the case of the large complicated Concho stone, I divided it vertically in half for two readings, and only used Cup and Ring symbols with more than one ring. I omitted cup marks in all cases as with Achnabreck.

The diagrams used were taken from the works of Morris and Beckensall which are scaled, and I believe taken from tracings. As can be seen, samples are from Argyll, Galloway, and Northumberland. Each diagram was scaled up to the 12"x8" size before measuring.

Just before I completed this thesis the Royal Commission on Ancient and Historical Monuments of Scotland 1988 volume on Mid-Argyll became available with its photographs and precise drawings of the Argyll Cup and Ring stones, I have used two of these drawings for comparison with the childrens' tests, treating them in the same way as those from Morris and Beckensall.

Since the sites only give one set of figures, I used the average figure from the non-thinking papers for comparison, this is assuming that the placing on the rock is thought about. The maximum variability figures from the sites were as follows.

<u>Site.</u>	<u>Variability.</u>	<u>Reference.</u>
Cairbaan 1	19	Morris 1977, 64.
Cairbaan 2	9	Morris 1977, 64.
Townhead 1	8	Morris 1979, 173.
Dumtrodden	9	Morris 1979, 94.
Concho stone		Morris 1981, 126.
right hand	14	
left hand	22	
West Horton	24	Beckensall 1983, 97.

Old Bewick	17	Beckensall 1983, 174.
Poltalloch	15	Royal Commission. 1988, 123.
Torbhlaran	21	Royal Commission. 1988, 124-5.

Looking at the comparisons; 7 of the sites have much greater variation than all the non-thinking tests, more than 100% in some cases. Out of the other three sites one only comes below all the tests, and the other two come below two of them only. Thus the comparison indicates that the rock sites may show more affinity to the thinking process than the non-thinking.

There are however inaccuracies and variables in this comparison that are difficult to control. First, it is obviously a very different process to carve on rock than to draw quickly on a piece of paper, and the thought involved has a very different time scale. Second, no account was taken in the measurement, of the varying diameters of the Cup and Rings, or the number of concentric circles around each cup. In this comparison with sites, it might be more valid if the groups of children or other persons could be asked to actually place a variety of Cup and Rings in space, but this would require a much larger expenditure of time by the groups. There is also the very important point, that if one is putting down a symbol that needs careful construction and thought, such as a Cup

and Ring on paper, it may be very difficult to put it down or place it without some thought and intention. If this is so it could be even more true when carrying out the rather laborious task on stone.

To summarise: I think that the tests above help to support the idea that considerable varied placing can come from careful thought, and often careful thought may lead to more variety and irregularity in spacing than when the shapes are placed without concern or thought. Although I do not think that this necessarily proves that the Cup and Rings were placed on the rock in carefully thought out positions, it certainly shows that they may have been, and that there is considerable likelihood that they were. It follows that the spaces between symbols and around symbols were also important

Since I have been looking at the question of the distribution of points in space, this seems a relevant time to return to the idea of centre and periphery which I first mentioned in the introduction, and again with Christison's work.

Strauss (1972, 134-152) claims that basic principles can be found at various social levels and in different parts of a culture, in the spatial distribution of the village layout for example. Hillier et al (1976) also support this, a definite relation is seen between the village and town growth and distribution, and the social structure. From this we may ask whether the spatial distribution of people over the land may not reflect their spatial use in other

areas. In the case of the cultures that may have been associated with the Cup and Rings, we have little evidence of settlement patterns, but we may find spatial patterns with similarity between the distribution of the Cup and Ring sites and the distribution of the symbols on the individual rocks.

With the concept of centre and periphery one needs to decide how one assesses the characteristics of the centre in the case of the Cup and Rings, or how one defines importances. In the case of other archaeological finds such as perhaps stone axes, this may be density of finds, or in other cases it may be the size and density of settlements. In two sketch maps based on Morris's work in Argyll, I have looked at two characteristics of the Cup and Ring engravings. First, sites with numbers of Cup and Ring symbols on the rock face, regardless of the number of concentric rings on each symbol. Second, sites where the greatest concentric rings on any one symbol is the selective characteristic. It is interesting that there is a considerable correspondence between these two.

If we look at the number of Cup and Ring symbols per site, three centres of importance appear in the Kilmartin area. These are Achnabreck with over 50 Cup and Rings on one rock and 39 on another, Ormaig with 60 Cup and Rings, and Cairnbaan with 17 on one rock and 25 on another. Closely adjacent to these are sites of some significance with approximately half this number of Cup and Rings on the rocks, while farther away on the periphery are sites with two or less Cup and Rings. There is an interesting gap when moving south

away from these major centres, until one meets another group of smaller sites around Muasdale. Here the largest number of symbols at one site is about 11 at Low Clachaig, this is a rock that has been split into two halves and since the symbols are extremely faint and difficult to detect there could well have been more than 11, thus this rock might have been a little more imposing in the past than at the moment. This site might be seen as an outlying centre of lesser importance than those to the north, and there are a number of smaller sites nearby with only 1 or 2 symbols on each. Always as I have said before excluding the Cup marks of which there are often quite a number. We could therefore be looking at a ceremonial or religious network of sites, with varying degrees of importance, including casual symbolic echoes on the periphery. At the structural level I think we can follow on from the points I made at the beginning of these three paragraphs. The distribution and spacing of these sites and their relative importance does seem to repeat on the larger scale the spatial relations that are found on the many individual rocks between the symbols.

Following on from the above discussion, it is useful to look at the two maps of Lochgilphead and Kirkcudbright, which are also concerned with distribution in space. The Lochgilphead map shows the type of distribution that I mentioned earlier in the introduction under centre and periphery. Other finds such as cairns, cists, and standing stones are found close to the Cup and Ring sites that I think are important. Achnabreck has two standing stones within a kilometres distance to the south, and two more a little over two



kilometres to the north. Neolithic flints and a hammer stone were found approximately two kilometres to the south at the same place as the Badden cist slab. A Neolithic polished stone axe, chips from a similar axe, and some flint scrapers were found just under two kilometres to the west at Greag Ghlas. Even more impressive is the great concentration of all finds and petroglyph sites about 6 km north of Achnabreck and 1-2 km south of Kilmartin.

From the figures for the Lochgilphead map 55, it can be noticed that the Cup and Rings seem to be especially close to chambered cairns, round cairns, standing stones, and cists. There are only 9 chambered cairns in the area, so closeness might not be expected so much as in the case of the round cairns where there are 35; but 35 out of 43 petroglyph sites are less than a distance of 4 km from the chambered cairns, and 22 less than 2km. Fifteen of the engraving sites, that is over one third of the total on the map, are less than 1 km from a standing stone, and 31, that is over two thirds of the total are less than 2km from a standing stone, while only 3 petroglyph sites are more than 4km from a standing stone.

Petroglyphs are evenly distributed below the distance of 4 km in their proximity to cists, and only 5 are more than 4 km from a cist.

There are 35 round cairns on the map, which is far more than the other finds, therefore it is more likely that a petroglyph site will be near a round cairn than the other finds. Eighteen Cup and

Ring sites are found less than 1km from a round cairn, and 28 sites, well over half the total, are less than 2km from one.

If we look at the remaining finds, excluding for the moment mining, one can notice that petroglyphs tend to be placed considerably closer to the Neolithic and non-metallic Bronze Age finds, whilst the Early and Late Bronze Age metalwork tends to be placed farther away from the rock art sites, and are nearer in distances to the patterns of distribution of the mining sites. One form of explanation is, that since the first group of finds are frequently found in burial situations, these are as we have seen closer to the engravings. However the Bronze Age metal finds may be associated more with the sources of ore, or since they are mobile items, lost while the owner is in transit or farther afield.

As we see the mining or sources of ore which have been located, are only 5, and well over half the engravings are more than 4km from these situations, and up to 20km in some cases. Thus to return to Morris's theory of prospecting, or the importance of the proximity to ore being a possible explanation for a function of the Cup and Rings. I have claimed earlier that the closeness between the Cup and Rings and mining sites is not a constant correlation for all the petroglyphs in the British Isles and Ireland, but we can see here that even in an area where ore sites are nearby, they are still relatively farther away from the Cup and Rings than other finds such as cists, standing stones, and cairns. Thus the theories of

explanation could more reasonably relate to one of these, if one is basing the explanation on proximity.

It is Beckensall (1983) that claims the importance of the proximity of Cup and Rings to burial sites in Northumberland, and as I have indicated above this association could be supported from the Lochgilphead area. The majority of the Cup and Ring sites are less than 4km from a chambered cairn, round cairn, or cist.

Turning now to the Kirkcudbright map 83 and figures, a close comparison with Lochgilphead may not be easy, as the kinds of recorded finds are different. With reference to the idea of centre and periphery. I think one would need to look at the area of the map in at least three sections, possibly four if one sees the west of Kirkcudbright Bay as separate. First, the Whithorn peninsular south of Wigtown; second, the central coastal area to the west of Fleet Bay; and third, the area to the south east of Kirkcudbright itself. It is not difficult to define sites with more importance from size and richness around Whithorn, such as Drumtroddan, or Broughton Mains, these could be seen as central. The same is true of the area south-east of Kirkcudbright, where Townhead, High Banks, or even Newlaw Hill, could fulfil the role; the latter site may well have been larger when carved, as it now consists of a number of fragments, half of which have interrupted or cut off symbols on their edges. The central area to the west of Fleet Bay is more problematic, as so many of the sites in the area consist of small stones or slabs, and few offer themselves as centres of importance.

If however what I suggested about Newlaw Hill was true of some of these fragments, there may have originally been a larger more complex site. Some of the fragments, now sometimes widely distributed or missing, may have belonged together.

An important difference to the Lochgilphead map is that on the Kirkcudbright map there are nearly twice as many engraving sites, 84 in total. Fifty two of these Cup and Ring sites are less than 4 km from a cairn, a similar proportion to that found in the Lochgilphead area. On the Kirkcudbright map cairns are again the biggest number of finds except for the engravings, but in this case no distinction is made between the chambered and the round cairn, although there is every reason to believe that the chambered are well in the minority.

A noticable difference to the Lochgilphead map is the far fewer number of standing stones, only 9 as compared to 22. Thus with the greater number of sites for Cup and Rings on the Kirkcudbright map it is not surprising that the distances between engraving sites and standing stones tend to be greater. Nevertheless there are still 18 petroglyph sites less than 1 km from a standing stone, and 51 less than 4km. Again with the Kirkcudbright map the tendency is for Bronze Age finds to be at a greater distance from the petroglyphs than burial sites or standing stones.

I have produced a table for both Lochgilphead and Kirkcudbright which ignores the question of distance and only looks

at heights. In the Lochgilphead area most finds, and petroglyphs, are found between levels of 15-76m. There are a few finds and engravings below this level, but some of this land would have been covered by the sea in the various rises of sea level during the Neolithic and up to 1140 bc (Simmons and Tooley 1981, 132). It would not have been continually covered, and low islands in sea marshes are always possible.

The situation of the areas covered by the Kirkcudbright map is a little different. Although most other finds do tend to be found below 100m and quite a proportion below 50m, the petroglyph sites differ somewhat. Two thirds are below 100m, but there are still a considerable number which appear above 100m, and some above 150m.

To summarise the figures and findings from these two maps, although I find that I am unable to reach any concrete conclusions, they do tend to make me more doubtful of any actual causal relation between the Cup and Rings and mining sites, or sources of ore. I would tend to side more with Walker's (1974) idea that petroglyph sites were adjacent to settlement areas, as yet not closely defined however, which were dictated by height and environment. It would seem to be the land between 15-100m that was most popular in these areas. If as Beckensall claims, there is a close spatial proximity between engravings and burial sites in Northumberland, I think there is some support for that idea from these two maps. This need not indicate a direct ritualistic or ceremonial relationship, but merely two activities happening as part of a single culture in a common

settlement area. It is a major claim of the thesis that if the activities were within one culture, they would both exhibit similar symbolic structural principles, and this is a matter for future research. It may be that if the correlation is accepted, the rock engravings have useful information to provide about the focus of activities that are non-figurative.

I will now turn from looking at spatial distribution over an area, to the use of space on the rock face and the immediate surroundings. To do this I will look at the work of Conkey (1982) and the questions about space that it raises. This is important because there is a tendency in many writers to detail their particular attributes and contexts, and assume a general applicability to other prehistoric provinces. Such a trend should be resisted. For Conkey space in a sign presentation is not arbitrary,

"--- it follows that in the construction of a field in which the visual image is placed, a field that corresponds to a segment of space, we can expect to find models of some aspects of the cognitive and cultural matrix of the makers and intended viewers" (1982, 119).

Conkey focuses on Palaeolithic cave paintings and mobile carvings, and sees most work falling into her categories of,

"\_\_\_ an unbounded or floating design. Then there can be an image that is contained in and isomorphic with the medium ---" (1982, 122).

She claims a lack of differentiation of levels and strong iconicity (sharing properties between the image and what it represents) in most Palaeolithic art, without any frame or boundary. However some is seen to fall into her second category, where scale and fit of image is controlled by the ground or medium. Some images can straddle these categories, such as the Altamira animals painted on the rock bosses of the cave ceiling, to give relief, or the Pêche Merle horse using the shape of the rock for its head; there are many other examples.

It is these characteristics in the use of space, in addition to the tight fit between image and media, which lead her to identify the systemic or cultural principles of 'continuity, permanence, and timelessness'.

It is difficult to identify very closely with this analysis when looking at the Cup and Ring petroglyphs. There is no apparent strong iconicity, and thus the concept of undifferentiated levels is hardly applicable. Compared to the often vast expanses of cave wall we cannot claim that the usual rock surface of most Cup and Ring engravings is unbounded or unframed. Quite the contrary, the engravings on many of the larger rocks seem to demonstrate an awareness of the rock edges, from the continuing spatial proportions between the images themselves and the rock edge. Examples are the two stones at West Horton North (fig.F4,7), or at Fowberry Moor (fig.F9), and the superb stone at Derrynablaha (fig. H7,8,9), see also the tracings in the folder.

Looking at the smaller stones with tight fitting images such as the 'Prince of Wales Feathers' and the other unusual 'boat' shape carving at Torrs, Galloway (Morris 1979, 165-6), (fig. C6, 9), one again feels that the scale and fit of the image onto the ground is all important. As I have said, however, caution is necessary, as many small stones are only fragments.

It is interesting to note that the relief of the surface is sometimes used to enhance the solidarity of the image; in Galicia there are examples of Cups and Concentric Rings fitting snugly over smooth rounded protuberances, giving almost a three dimensional or at least relief image. (See for example, illustration from Parades and Fentans, Campo Lameiro; or Pedra da Beillosa, Fragas, the same area (fig. I8, J6)). In Scotland the best example of using the relief of the rock is found at High Banks, Galloway, (Morris 1979, 113), (fig. C1, 2, 5). Although there might be a temptation to see a female symbolism in some of the Galician examples, I would not think it profitable to pursue the point farther.

Conkey arrives at concepts of 'continuity, timelessness, and permanence,' but there are fundamental differences between the earlier Palaeolithic images and the Cup and Rings, and therefore I feel that we can only use Conkey's work at best as a starting point for an analysis of the use of space in the Cup and Ring system.

I would suggest that with the Cup and Rings there is a control of space and order, but essentially it is not symmetrical.



but takes differing forms; the space within the concentric circles may be precise and involve a mathematical type of progression, or repeat. The use of space surrounding the symbols although different is not necessarily thoughtless and random as I tried to show with the childrens' work. It is not limitless or unbounded. It is known space of almost infinitely variable divisions, but the variability is intentional and controlled. Indeed if one looks at the use of space on many larger stones, one can argue that it is the complete denial of symmetry , and it is this denial that is an important part of the non-verbal 'message' or 'statement'. See illustrations of Pedra Lomba da Costa, S.Xurxo de Sacos, Galicia (fig.I1,2); or the rock from Derrynablaha, Kerry (fig.H7,8,9, and the tracings). However within the images the opposite is true, here one has very accurately stated concentricity around a concave focal point. Frequently a linkage between these structurally precise elements is present, in the form of one or sometimes more radial lines; these cross the definitely structured space and enter the variability of the external space, or of course vice versa (fig.A8,10,F2,3,I2); this can be seen clearly in the tracings of Derrynablaha and Lake Coomasaharn in the folder.

Therefore, unlike Conkey's statements regarding the Palaeolithic, with the Cup and Ring we have differentiated areas or fields: the closely structured concentric rings, the variable external space surrounding them, and finally the external infinite limitless world external to the stone.

It is these factors which are constants throughout the vocabulary of the Cup and Rings, and to this must be added the notable fact that superimposition hardly ever appears. Superimposition or undifferentiated redundancy reinforces for Conkey the concept of timelessness and continuance, it can also illustrate ambiguity and uncertainty, or more important paradox. Thus its almost complete absence with the Cup and Rings would seem meaningful. These carvings are extremely confident statements of considerable precision and, unlike much Palaeolithic cave art, are not hidden away in 'another world', possibly infrequently visited. Cup and Ring carvings are invariably found in very exposed situations. I cannot remember ever visiting a Cup and Ring site that was hidden in any way by the terrain, although of course some are closed in by trees or foliage, but even this is quite rare. As we have seen when discussing the two maps of Lochgilphead and Kirkudbright, although engravings are not frequently found on the very high ground, they are very often on a raised up area which has a panoramic view in at least one direction. This is equally true of the English sites which tend to be on not necessarily high ground, but in positions which command good views. In Galicia one finds a similar situation, petroglyphs are seldom hidden away in the valley, more often they are found on the higher hills or plateau of about 1-150m, or on the exposed hill side or shoulder. This is Morris's opinion also,

"The carved outcrops are nearly always situated where they can be seen from quite long distances all round, or perhaps one

should say, where the sun can reach them for most of the day"  
(Morris 1979, 14).

This is the third limitless unbounded space in which the stone is set, not equating precisely to Conkey's concept of other worldiness, the 'elsewhere', or 'not here' of the hidden cave paintings. The 'out there' might well illustrate aspects of continuation and permanence, but within the known world other increasingly more controlled and finite space and time existed for the Cup and Ring makers.

Looking again at the tightly structured space of the cupule and concentric circle (see the large rubbing of the engraving at Gled Law, Northumberland in the folder as an illustration of this point), surrounded by the variable space outside, we are led away from the concept of total 'continuance' in Conkey's work, towards thoughts of the dualism or bipartisanship found in Leroi-Gourhan's analysis (1968), or, as Alan Hanson (1983) claims, one of the dominating principles of Maori culture. However my argument for the Cup and Rings is that we should include the external space around the rock, and this could lead to three levels, or a triadic structure. Levi-Strauss (1972, 134-5, 149-52) illustrates how both the diadic and the triadic structures can exist within one culture, although the diadic may be seen as the more obvious. This spatial model can then be developed to a greater complexity, as an expanding continuum, from the tightly controlled and absolutely finite Cup mark, surrounded by precisely delineated concentric space, this in

turn expanding into the immediate variability of its surrounds, which in turn expands into the limitless continuing infinite.

Here it is helpful to look at the work of Hillier et al (1976) on Space Syntax. As with a number of other writers mentioned previously they see a structural concurrence or congruence between parts of the social system including, all important to them, perception and concepts of space.

"In this perspective a key relationship comes to the fore; the relationship between the formal structure of what there is to be known (for example, the patterns of space organisation, patterns of social networks, and so on), and the formal mental structures by which these are known or recognised. It is then an obvious hypothesis that the same formal structure could account for both" (1976, 148).

To a large extent the Cup and Rings can be fitted into a morphological language. For Hillier et al a morphological language differs from both a natural language, the verbal, which represents the real world, having a large lexicon and minimal short conventional grammar permitting infinite sentence constructions; and the mathematical language which has a very small lexicon but a large syntax and structure that may be developed. An important point is that this mathematical language is useless for representing the real world as it appears, being only able to represent its own structure.

Morphic language differs but not absolutely from both.

"From natural languages morphic languages take the property of being realised in the experiential world, of being creatively used for social purposes (or permitting rule governed creativity) and of being constitutive rather than representative of the social" (1976, 152).

It is useful to pursue this idea a little in relation to the Cup and Rings, that is as a space organisation constitutive of the social. It is quite feasible to read the engravings at the level of a morphic language, whilst not denying that they may have communicated a more wordly or even semi-iconic meaning at a different level.

First we look at Hillier et al's most simple level of space language, 'the minimum set up'. That is the morphic language without its syntax, or operating randomly. The syntax being,

" --- a set of elementary objects, relations and operations, capable of being combined to form rule structures to resist the randomness of the minimum set up" (1976, 150).

Therefore the minimum set up is a carrier space, and secondly an ongoing process of production, which marks segments of the surface space and differentiates them from the remainder. but

without relation between one marking and the next, hence random. Nevertheless as Hillier et al state,

"--- we may treat randomness as a special case of pattern" (1976, 150).

This description is an alternative way of looking at the use of space by the Cup and Ring makers - an intentional variability, one might say an intentional randomness. This may be a contradiction to some extent, but in the creation of visual form it is acceptable, and seems to be a fundamental concept for the Cup and Ring engravings that we cannot totally ignore.

Previously I suggested that by looking at some of the major stones one can conclude from the use of space and scale that there was an awareness of the boundaries of the rock, on the part of the Cup and Ring engraver, when he placed his forms in space. Although difficult to prove, I suggested that the idea is supported by the proportions of space between the edge and the nearest forms, and that between the forms themselves, that is the total allocation over the rock.

If one looks at other larger engraved rocks this idea does not always hold up. For example on Southannan, Ayr, (Morris 1981, 33), or perhaps Baluachraig, Kilmartin, (Morris, 1977, 57). the groupings are concentrated, then there is a large disproportionate distance between them and the other groups, or the

edge of the rock. A good example can be seen in one of the tracings of the rocks at Lake Coomasaharn in the folder, where the two Cup and Ring forms and the pitted and broken forms accompanying them make a rough diagonal across the part of the rock that is traced; there is a large part of the rock not engraved. Possibly in cases where there are different groups they could have been carved at different times, or if done at the same time there could still be a relationship between the signs, possibly at a different level of meaning, but we need another description of the way the grouping or random placing is achieved. Here again Hillier et al can be helpful.

Referring to their minimum 'set up', they give a description of the way the 'carrier space' can be created without obvious boundaries - I think the long quote is justified.

"The first object is placed at random, and then another an arbitrary distance away, in an arbitrary direction, possibly following topological or resources constraints. By this time it is possible for the third object to treat the zone within which the first pair can be thought to lie as the carrier space to which it will relate. As the process develops, each object as it is placed will either be surrounded at some distance by other objects, in which case it will not be near the edge of the carrier space, or it will be only partly surrounded by other objects, , in which case it will be near the edge or even outside. if this latter case arises, then the next object will be placed back in the region of the other

objects in order to follow the rule of belonging to the carrier space" (1976, 164).

Thus a minimum structure is acquired similar to that which is given by Rene Thom in his description of the formation of a cloud of mosquitoes, referred to by Hillier et al.

" If each mosquito while moving randomly with respect to each other mosquito sees half of his field of vision free of mosquitoes, he moves in the direction of the mosquitoes" (1975, 319).

These processes lead to a minimum syntactic rule for a coherent spatial use. With this rule the carrier space can be defined even when no boundaries are present or acknowledged.

Moving now to the objects in the carrier space, or what Hillier et al denote as discontinuous space, the first concentric model is at their level four syntax, thus having far more complexity than the minimum space it is set in. Interestingly it is defined as a sequence leading to 'deepest space', and architecturally has normally tended to appear in sacred buildings. Concentric models with various arrangements of internal units, are given even higher and more complicated syntax grading by Hillier et al. The Cup and Ring groupings at Ormaig would equate to this (Morris 1977, 113), (fig. B4, M) As can be seen in the large illustration, the dominant and rather unusual form here is the central cup mark surrounded by a quite precise and symmetrical ring of other cup marks, which in turn



is surrounded by a concentric circle. This form appears on the rock seven times in different sizes, the largest being approximately 30cm across; it is accompanied by numerous cup marks and cups with single rings. The only other rocks which have forms that are similar is the Auchenlarie stone, Kirkcudbrightshire (fig. C3), Anati's stone number 10 at Derrynablaha (fig. H1), which I discussed in the chapter on Literature, and a single poor example at two other sites, Duncroisk (Morris 1981, 57), and Greenland (Morris 1981, 102). In addition grouped cup marks enclosed within concentric circles are quite common in the Vigo area of Galicia (fig. J1, 2, I3, 4) (Goberna 1984).

Thinking in spatial terms again, we can say that the Cup and Ring forms are set first in an outside area of limitless space and time, whilst the rock space itself is defined by a minimum random pattern with a very basic syntax, but in some cases I suggest more intentional spacing is probable. However the forms themselves are at varying levels of complexity with an intentional and rational use of controlled space.

One final important point I will extract from Hillier et al is the illustration from their simple minimal syntax, that each object not only contributes its own discontinuous space, but also its own pathway to the next object. A network of routes then forms. This may be compared to the connections between forms at Achnabreck (Morris 1977, 36), (fig. A8), or Townhead (Morris 1979, 172-3) (fig. C7, 10) or the three fine complex Cup and Rings at Weetwood Moor

which are joined to each other by a linear groove, and are then in turn joined to more distant Cup and Rings on the other side of the rock (fig.D10). Again there are also clear examples of this in the tracings of the rocks at Derrynablaha and Lake Coomasaharn in the folder.

It is interesting how common is the presence of the radial groove or gap into the concentric rings. Although Morris (1981, 167) claims that over half the Cup and Rings in his three areas do not have radial grooves or gaps, he is counting individual forms, and also excluding Cup marks with grooves coming from them. If we look again at Morris's three areas, but take note of only site groupings, we obtain a different picture. Looking at Argyll, out of 81 sites or groups of engravings, 23 do not have a Cup and Ring with a radial groove, gap, or Cup mark with an extended line. However out of these, 9 groups are made up of non Cup and Ring designs, that is lozenge axes etc, and others are all rather broken fragments or have only one or two simple single rings. In the Galloway region, out of 112 sites only 15 do not have a gapped or radial grooved ring; some of these are unusual, such as rings and no Cup mark, and again others are smallish broken fragments. Lastly for South Scotland, Morris gives 120 groupings or sites. I count about 17 that do not have a concentric circle with gap or radial groove, or Cup mark with a tail, but the same reservations can be applied to these.

When we look more closely at the grammar of the Cup and Rings, and attempt to summarise some possible conclusions, I will return to this question.

The relation between spatial use and social structure is no simple one. At times it may work inversely, see Hillier et al (1976, 180); or at other times spatial use may appear deceptively simple in relation to complex social relations (Levi-Strauss 1972, 132-62); but I have noted these contradictory possibilities in relation to the total system a little earlier.

We can now refer again to the two polarised typologies of Durkheim, which I referred to in my chapter on Art and Social Relations. These are Mechanistic solidarity and Organic solidarity, the former holds together groups of individuals by a strong common belief system with symbolic expression and punitive control, whilst the latter consists of differentiated individuals, with the division of labour, and unity from functional dependence.

The Mechanistic type more often relates to the open unstructured spatial pattern; cohesion and tight unity stems from the deeply penetrating symbolic expression, plus punitive reinforcement. In this case space may be seen to alleviate the strong social tensions of the smaller cell.

With Organic solidarity lacking the common belief system and punitive reinforcement, it would seem that the structured spatial

model restrained by external boundaries becomes more prevalent. here spatial use serves to support social cohesion in the less structured social situation.

In the first model of Mechanistic solidarity, although the 'carrier space' or ground may lack limitation and structure, cellular units will conform to the tight common belief system, and show considerable global unity in form, although dimensions may well vary.

I have looked at the question of space in some detail since I see it as a fundamental aspect of the symbolic system, indeed one can see the creation of forms as the defining of space. I will now proceed to the grammatical syntax, or the rules controlling the designs.

#### An Exploration of a Grammatical Syntax.

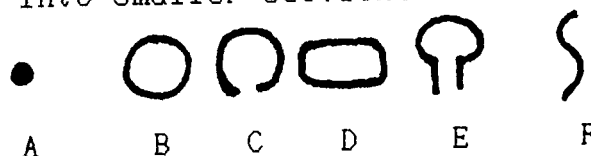
Moving from the use of space, we can now focus more on the construction of the vocabulary of forms, which at first sight and even after considerable examination can appear as an almost unlimited variation on a very simple theme. Certainly the lexicon of the grammar is small.

A major problem of attempting to form operations for the grammatical rules, a syntax or what Faris (1972,101) calls his

generative algorithm, is that the Cup and Rings have little symmetry between forms in scale or size, as we have already discussed; and when present radial lines which may connect forms can be guilty of infinite meandering, and at times not connecting. However the all over identity of the engravings, and their common characteristics do indicate a syntax or grammar, although we may find that the rules are of a probabalistic nature.

We can follow two approaches, neither of which seem fully adequate alone, but together help us to see aspects of the structure underlying the visual vocabulary. First, as stated above, utilising the approach of Faris, and Hodder (1982,179), and then that used by Munn (1966, 1973).

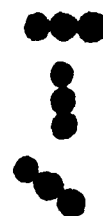
First we set a lexicon of basic shapes as below; they could of course be broken down into smaller sections.



1) Choose Cup mark A.



a) Connected repeats, horizontal  
vertical  
diagonally



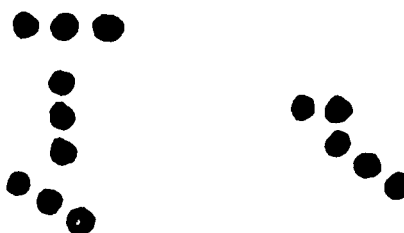
b) Choose spacing, units of quarter Cup marks.



c) Repeat Cup marks, horizontal

vertical

diagonal



2) Choose larger or smaller Cup marks A.

processes as above.



3) Choose element BCDE.

a) To surround Cup mark or marks, at  $1\frac{1}{2}$  Cup marks space



b) Continue with BC or E, to give concentric rings outwards.



NB. Choice will depend on the first choice in a) to avoid superimposition.



4) Revert back to any Cup mark. Choose element F.

a) Extend from the Cup mark, horizontal

vertical

diagonal.



b) Continue

horizontal

vertical

diagonal.



NB. More variation could be introduced into the last operation by using a selection of curved shaped lines of different lengths, and increasing the concepts of horizontal, vertical, diagonal, to smaller bisected angles of direction.

If the aim was to test this development on a computerised system, random spacing could be chosen between the constructed forms; or a chosen variation of space, built up from very small chosen dimensions.

Beyond this broad grammatical approach I have suggested, one would still have to admit to residual quantities, such as the spiral or the non-circular enclosing shape; for example the soft cornered, triangle or rectangle, also the very few figurative forms. Since these categories are so few they could either be designated as 'foreign acquisitions', or with more complication built in as options within the grammar. If we look again at Morris (1981,166), in Galloway, Argyll, and South Scotland, the spiral only appears 27 times out of approximately 1921 other forms. Other motifs such as the few figurative have an even smaller proportion.

We looked earlier in this chapter at Munn's work with the Walbiri (1966,73). If we now look at the way she approaches a grammar, we will find that she arrives at a similar result to Paris and the above approach, but by somewhat different methods.

Munn commences with the identification of core symbols, these tend to have non-specific meanings or are discontinuous categories. Virtually a simplified shape, which may then relate to a wide range of phenomena which have a visual affinity to that shape.

It is useful to realise that this high degree of generality is not only found in Walbiri symbols; we saw it earlier in Turner's work (1967, 20-25), and Boas (1955, 103-4), when looking at the symbols of the Arapho, illustrates that not only do symbols have a variety of meanings, but one meaning may have a variety of symbols.

In the case of the Walbiri the specificity of these core symbols can be narrowed down to a more precise meaning by the construction of a visual context, that is by the addition of a choice from a much wider variety of forms or adjuncts. Thus the final complex composite categories are arrived at, and there is movement from the discontinuous categories to the continuous.

If we look at the less complex vocabulary of the Cup and Ring engravings, it is possible to apply a simpler model.

We may denote the Cup mark as the core symbol, then the adjunct forms can be seen as:-

Varieties of line:-





Circles: -



Or perhaps elongated ovals,



and very occasionally soft rectangles or triangles.



The actual groupings of the Cup and Rings on rocks may then be seen as developments in degrees of complexity. To what extent we can extend the analogy to hypothesising on degrees of specificity of meaning, with regard to the Cup and Ring petroglyphs, I will refer to below.

#### An Approach to a Typology

I have frequently been using as illustrations in my discussions the more complex rocks, but many others contain far simpler groups of forms. Whilst still attempting to remember our reservations about the completeness of many rocks, if we look again at our approach to syntax, especially Munn's model, it may be possible to pursue a little farther some of the ideas I mentioned in the chapter on literature and elsewhere. That is to make a distinction between groups of forms at different sites, and their

development to varying degrees of complexity. we may then be in a position to move towards a basic tentative typology.

There are many rocks in the British Isles and Galicia which have only Cup marks. In Scotland these far outnumber rocks with the more complex designs (Morris 1981,166). Whether some originally possessed concentric rings and these have been worn away, is a point I mentioned previously.

1) These forms can be seen as basic core symbols, possible with very diffuse meaning .

2) Other rocks have a slightly more developed Cup mark, with adjuncts of short linear extensions, occasionally single concentric circles, keyholes or the elongated oval; see Kilmichael Glassary (Morris 1977,100), (fig.B5,6,7), or on Ballymeanoch standing stone (Morris 1977,55), (fig.B1) or the slab stone from Upper Newton, Galloway (fig.C4).

3) Further groupings are distinct from 2) above. Cup marks may have a simple concentric ring or none, but the linear adjuncts are very long, and sometimes join each other, but when flowing back down the rock give a plant like formation. See Lake Coomasaharan Kerry, (fig.G1,H4), or Lordenshaws, (Beckensall 1983,207), (fig.E2,7).

4) On some rocks these simple forms may be joined by linear adjuncts creating quite complex networks, or non-typical forms, see Torrs (Morris 1979, 165) (fig. fig.C6), the single free stone found on Baildon Moor, Yorks (Haddingham 1974, 54), (fig.K3), and in Galicia, Gandara G11, Chain Gondomar (Goberna 1984, 68), (fig.I3).

5) A further stage are the rocks with the simplest of Cup and Rings, usually only one or two rings, and with simple cup marks associated. See Cairnbaarn 1 (Morris 1977, 63-4), (fig.B9, 10), or the Badger rock at Ilkley for a more structured example.

6) Some larger stones have groups of enclosed Cup marks, as opposed to the one cup of most concentric circles; although the latter and other forms may be present as well. For example Dodd Law Northumberland (Beckensall 1983, 77-8), (fig.D1, 2, 5), also the Horseshoe rock at Lordenshaws (Beckensall 1983, 203), (fig.E3); these forms are also common in the Vigo area of Galicia (Goberna 1984, 69) (J1, 2), as I mentioned when discussing Ormaig earlier in the chapter, and therefore following from that discussion one might include the rosette form from Ormaig as a subsidiary of this stage.

7) After the previous stages, one can place the more complex designs which are usually on the medium size or larger rocks. They can be divided into two types; the first can be noted for its variety of different Cup and Ring designs, mainly by scale and number of rings, but essentially on this type of rock the space between forms is minimal and the feeling over all is of compactness.

See Old Bewick (Beckensall 1983, 173-4), (Fig. E5, 6), Boho, Fermanagh, (fig. N, O), West Horton (Beckensall 1983, 99), (fig. F7), or the tightly spaced forms on the different levels at Boheh, Co. Mayo (fig. G8, 9, 10). The second is 8).

8) This will again include the larger and more complex designs, but the difference with this type and 7) is mainly in the use of space. In this case one has a definite feeling of space between the Cup and Ring designs of varying development. I think the rock at Derrynablaha (fig. H7, 8, 9) (see also the four tracings of this rock in the folder) is a good example. Although some of the Cup marks have a character and shape of their own, and one or two other forms are unique, the fine rock at Magheranau must come into this type, unfortunately fig. G2 only gives a detail. The rock at Weetwood Moor in Northumberland, site 3 (Beckensall 1983, 115), (fig. D10) is a good example. In Galicia the presence of other forms besides the Cup and Rings causes a complication, but if for the moment we ignore them or select rocks where they are not present, a rock such as that at Fentans (fig. I5) could be placed in this category.

The number of concentric rings around a cup mark is one aspect of grammatical development or complexity. Morris gives us some figures for the numbers of concentric rings.

In Galloway where he lists 111 rocks, having excluded those with only Cup marks, he claims,

Sites with maximum one ring	-	17
Sites " " two rings	-	16
Sites " " three rings	-	11
Sites " " four or more	-	47.

In Argyll Morris lists 81 rock sites,

Sites with maximum one ring	-	26
Sites " " two rings	-	14
Sites " " three or more	-	10.

Although it is not my purpose to explore these figures in detail, it would seem that Argyll has more simpler sites which have forms with only one ring, when compared to Galloway and South Scotland (Morris 1981, 166). Whereas Galloway appears to have more sites with the larger number of rings. However at the top end of the scale, as Morris points out, "Of cups-and-nine-rings there are only six examples- two each in Argyll, Galloway, and Western Scotland" (Morris 1981, 165).

9) Finally one could place in group 9 the really larger sites, such as the often mentioned Achnabreck. I think we would include Roughting Linn, certainly in its original state before quarrying; and in Galicia the larger sites such as Laxe das Rodas, Cotobade (fig. 11, 2), or Laxe do Outeiro do Cogoludo, Paredes (fig. 19, 10, J5) (Alén and Santos 1980, 25 and 51).

At Achnabreck there are at least fifty Cup and Rings, some up to 80cm in diameter, and some forms with nine, eight, or seven concentric rings; many have multiple radial grooves, at times making connections with other forms (Morris 1970-1, 103). Portalloch (fig. A3, 6) a few miles away has more weathered but highly developed groups of 23 Cup and Rings with one of the largest in Scotland, 84cm diameter. There are many examples of complex large sites in Galicia in addition to those mentioned, but many as I have mentioned have other forms to complicate any common grammar.

Therefore although the transition between groups and developments of forms can be seen as gradual, different levels of development can be perceived, as opposed to merely differences between the forms, and these developments can be related to the simple grammar or syntax which has been suggested.

It is perhaps with the comparison between extremes that the difference is most clear, as I discussed in the previous chapter on Chronology, comparing Kilmichael Glassary with Achnabreck, only a mile or two apart.

From my previous suggestions we are then left with a number of possible hypothesis or conclusions.

First, the varying statements on different rocks, indicated by the different levels of syntactic development, could well be an

indication of temporal or chronological change. This was a common conclusion in past literature. See for example Raistrick (1935).

Second, they could be an indication of different subcultures, with perhaps a fundamental common core belief system, coexisting through time and space.

Third, it might indicate the continuation of a common belief system through considerable time and space; with varying statements made on different rocks, stemming from the common grammar and syntax. Core and periphery concepts might apply more to this theory than the others, although subcultural expressions might also express in a more complex way the core-periphery concept.

These three categories need not be completely exclusive.

As I stated above the Galician carvings normally have an obvious variance of the deer form. Some such as Anati (1968) have attempted to see this as chronologically detached. Elsewhere under Chronology I have discussed this, and favour seeing the Cup and Rings and deer forms in Galicia as contemporary, but nevertheless post-dating the beginnings of the Cup and Rings in the British Isles. The concept of a culture with considerable structural affinities and similarities to those in the British Isles is a possible way of accounting for the Galician.

Other variations such as the wide flat bottomed cup marks in Donegal (fig. G2, 4, 5) (see also the tracing of the Magheranaul rock

in the folder) and the rectangle with infilling (fig.G3), might be accounted for as sub-cultural variations. I would prefer to see the occasional appearance of the spiral (fig.A5) on the natural rock in the British Isles as a result of external cultural contacts, possibly with links to the megalithic building traditions of Ireland.

#### Summary.

It is I feel essential to emphasise again at this final stage that many rocks with carvings on them are only fragments, which by the breaks across forms lead us to believe that we are only receiving portions of the groupings or any non-verbal 'message'. Many of the carvings found in or as parts of cists, as I mentioned in the chapter on Chronology, were possibly carved at a considerably earlier date than the cist, and then trimmed to fit. On the other hand some stones as already mentioned, such as Achnabreck and a number of large sites in Galicia (fig.J9,10) and others in the British Isles, give us every reason to believe that they are the original complete rock. There are many in between examples of course that we cannot be certain about.

In the discussion on spatial use I suggested that we had arrived at a three level spatial identity with the Cup and Ring carvings. First the external infinite and continuous space outside the rocks, the space in which they are set. Although normally not at a great height, seven out of eight sites are under 200m or about 660



ft. (Morris1981,169); it appears that the stones were chosen in positions which frequently had a panoramic view, thus emphasising the infinite space.

The second level of space, is the use of space on the rocks in which the forms are set. This as we have seen, although used almost intentionally to emphasise random spacing, does frequently seem to acknowledge the borders, or the finite nature of the block. Thus although not divided and structured in an obvious way , it is still not reflecting the continuous infinite that Conkey referred to. Therefore it is seen as finite and non-continuous.

It is the third form of spatial use which exhibits the high degree of structure and symmetry, in the concentric evenly spaced repeats of the circles, or the simpler enclosed Cup marks.

Although ostensibly we appear to have a triadic model of opposition, if one chooses to ignore the external space as not 'man-made', one is left with a dual opposition, and a diadic structure on the rock itself. Thus there is some ambiguity between the diadic and triadic. This ambiguity was noted in the work of Levi-Strauss (1972,134-5,149-152) that I mentioned earlier in the chapter. If we again refer to his work, we see that the concentric circle does not necessarily lead to a symmetrical diadic model of social/cultural structure; the tendency, as stated before, is for the central area to be unequal to the external, unless divisions are made diametrically. Following Levi-Strauss's lead, the concentric space

models often subsume triadic social structure within the diadic. Therefore it follows that if we are working from some of the more developed complex forms of multiple concentric circles, we might hypothesise a cultural background with a considerable degree of complexity, with reference to social divisions and kinship patterns, maintained by a Durkheim type Mechanical solidarity.

Although any such hypothesis must be extremely tenuous, and needing much support of a contextual nature, it may hint at a more developed, complex, and even larger social groupings in the second and third millennium than has previously been supposed.

With the Cup and Ring engravings, a diametric division seldom appears, although an example can be seen at Buttony (Beckensall 1983, 93-4), and at some of the larger Galician sites such as Laxe das Rodas (fig. I1,2); much more common is the radial line or lines from the centre, which may join other radial lines from other forms, an interesting example is the Barrow stone, Weetwood Moor, Northumberland (fig. F1). This radial line may take a a gapped path through the concentric rings, see the top part of fig.D3, or the smaller Cup and Rings at Poltalloch (fig.A3); on other occasions the line simply traverses the rings out from the central cup mark (fig.A10). Sometimes more than one line may be present creating a wedge shape into the centre, again the Barrow stone mentioned above is a good example (fig.F1); another interesting rock with this wedge shape is that at Chain Gondomar, Vigo, Galicia (fig.J2). In a simpler form this line may merely run away from an isolated cup mark

without any concentric ring being present; the rock at Lordenshaws gives a large scale example (fig.E7). If this line is very short, one is left with a form resembling a comma or a truncated exclamation mark (fig. B5,6,7) (Morris 1977,101).

This radial line from the Cup mark, with or without concentric circle, seems to make a very definite statement about 'inside and outside', moving from one space to another, one world to another; there is invariably a descent into the Cup, or from the space outside in to it. This in other societies has indicated the internal/external world, male/female; or looking at abstract principles, between the strongly defined and structured finite, and the less controlled infinite; or between the biological sphere and the cosmic.

In this chapter I have attempted to put forward some ideas on a way forward with the Cup and Ring petroglyphs, in order to investigate some aspects of their cultural origins or relations; essentially the aim was to identify some structural symbolic principles. Some evidence for diadic models of dualism, which may well subsume more complex triadic models, emerged from the analysis of spatial use and form. The dualism could be wide ranging in the cultural context, with a strong emphasis coming through in many groupings of an inside/outside movement, and the ever present contrasting use of space. This as we have seen could have important implications for cultural relations.

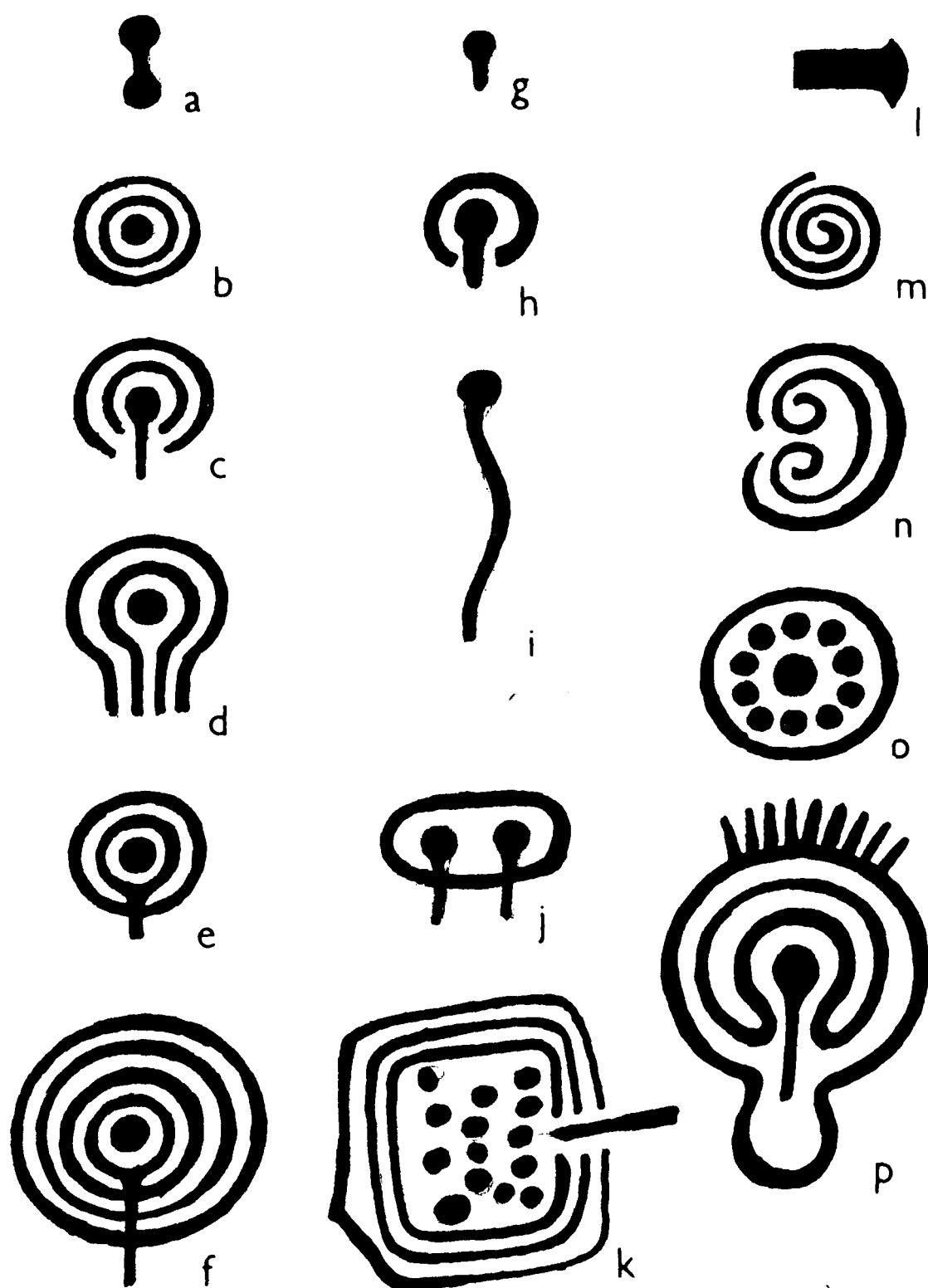
Further investigation and support for these ideas can be sought in other symbolic fields. One major difficulty will always be the lack of an accurate or precise chronology. Nevertheless as we have seen the Cup and Rings may have spanned a time range from 3200BC to 100AD. Certainly most authorities place them in the 1-2000BC span or a little earlier. Therefore it seems legitimate to discuss in the context of the Cup and Rings other symbolic forms which appear to have first a chronological affinity and also a formal affinity.

The relation between the Cup and Rings and Megalithic art has been discussed at some length in the chapter on Chronology. Interesting questions of overlap arise, but the Cup and Ring engravings can be seen to continue long after the flowering of Megalithic art, well into the Bronze Age.

I have looked at the question of the apparent distinction between decoration on the gold artifacts (fig.L3), or that on the Beakers. Any in depth comparative analysis is beyond the scope of this research, but I hope my approach may have suggested the need for such studies.

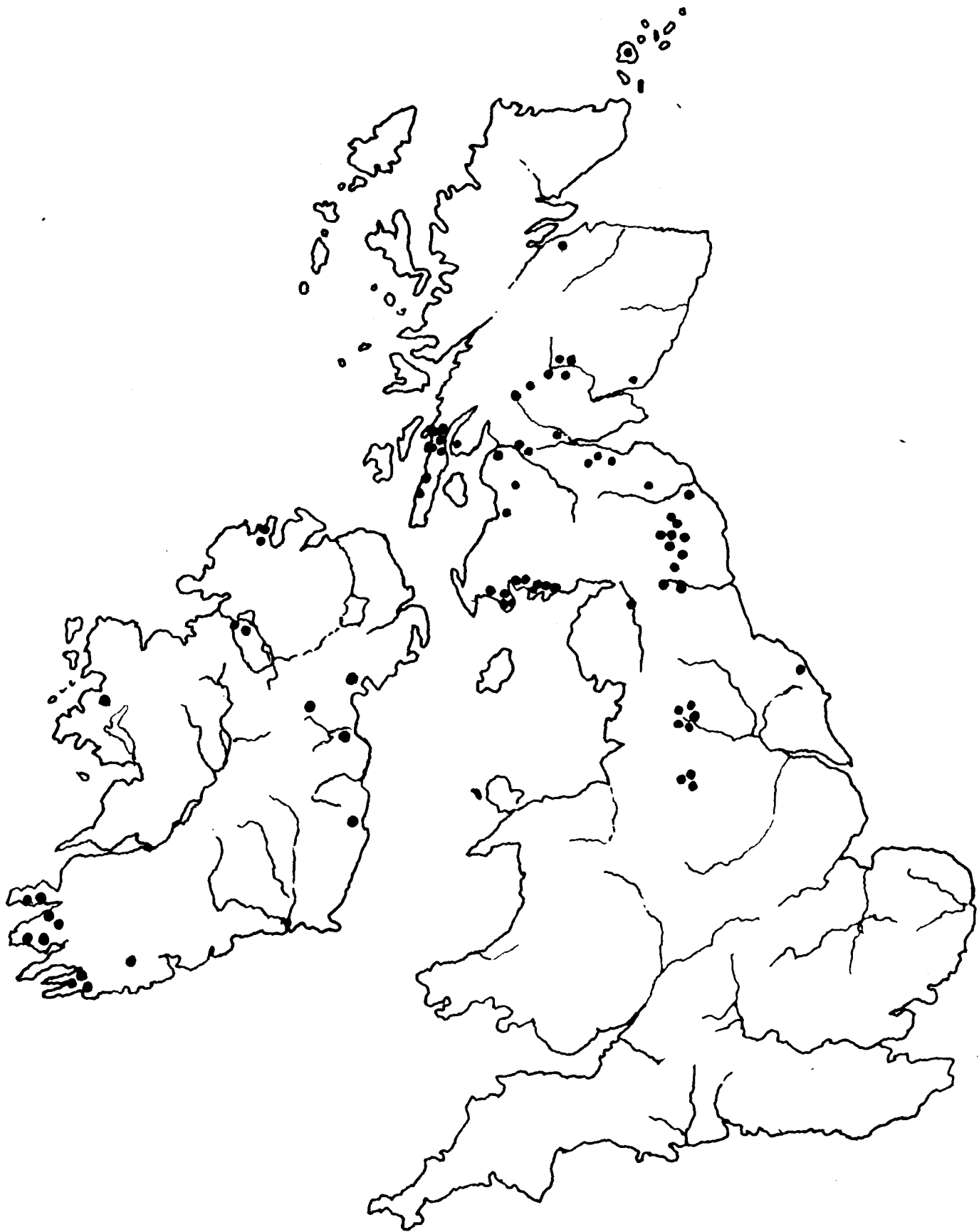
Many Barrow graves not only echo the Cup and Ring structure in their design, but in their grouping repeat a similar spatial use (Coles and Harding 1979, 366-7, photo 14). Whether or not such spatial patterning was related to that of the Cup and Rings remains for future work, and the gapped enclosures, such as henges, or stone

circles might also be suggested as being related in a similar way to the rock carvings. These wider concerns are outside the scope of this thesis, but much of the work suggests that the Cup and Ring images may well represent structured expressions of the organisation of prehistoric societies. If so, then the engravings are more than a mere indication of artistic tradition, evolving over time. They may carry within their seemingly-simple outlines a guide to the make-up and ordering of late Neolithic and Bronze Age societies.

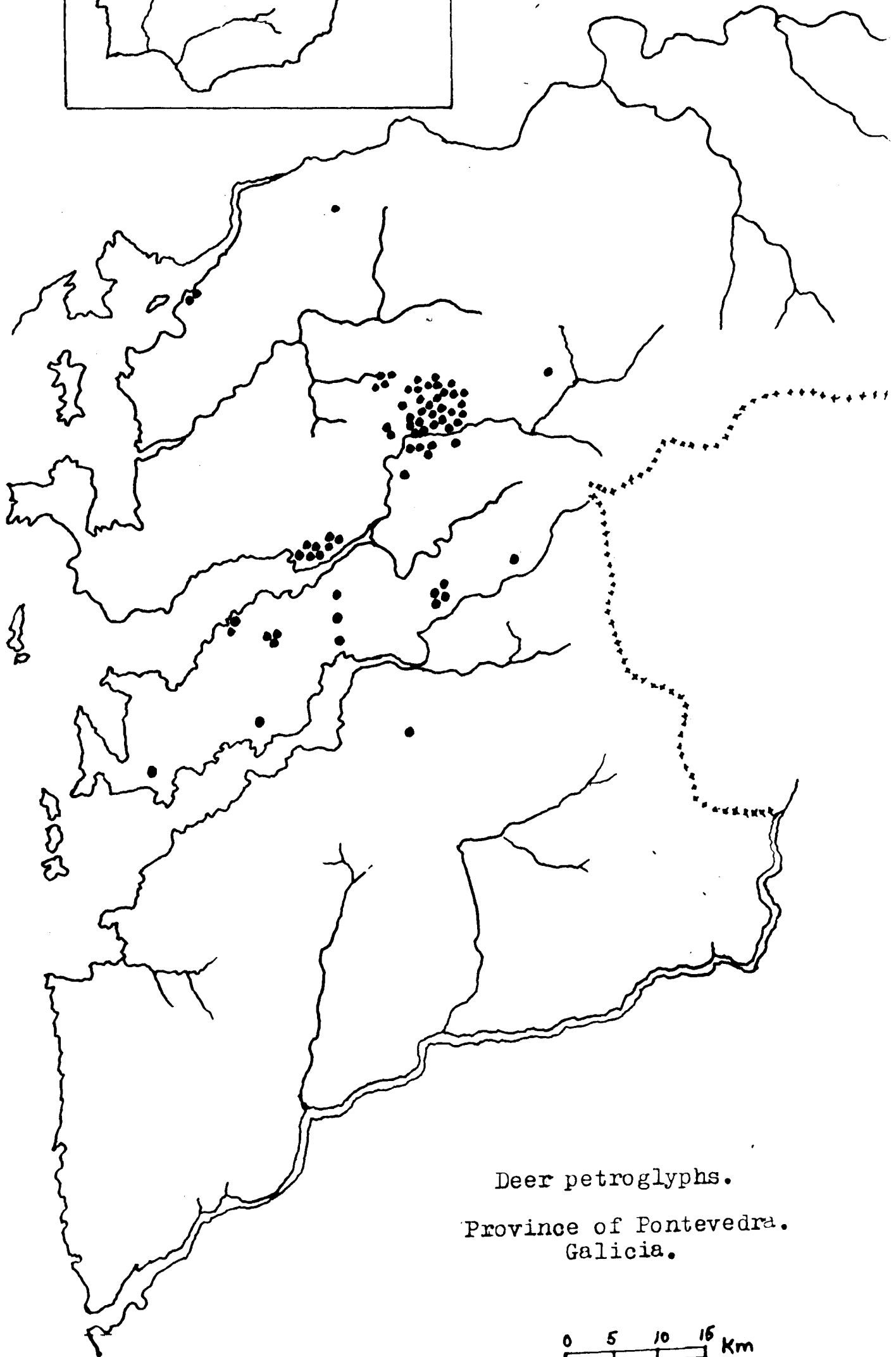
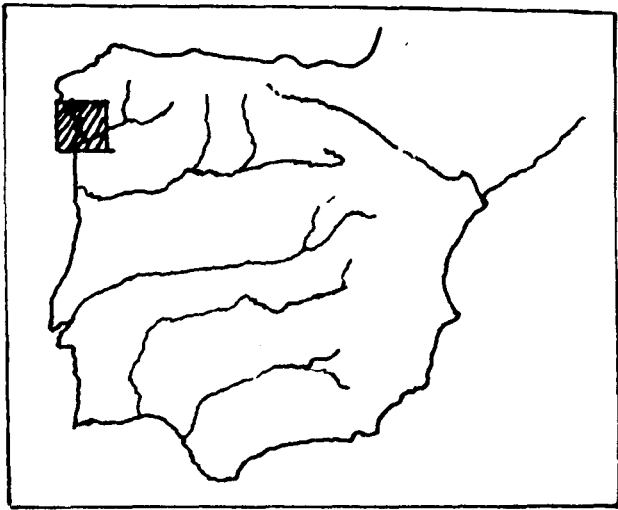


a-i : are the more common Cup and Ring symbols.

j-p : are the more uncommon, sometimes only occurring once.

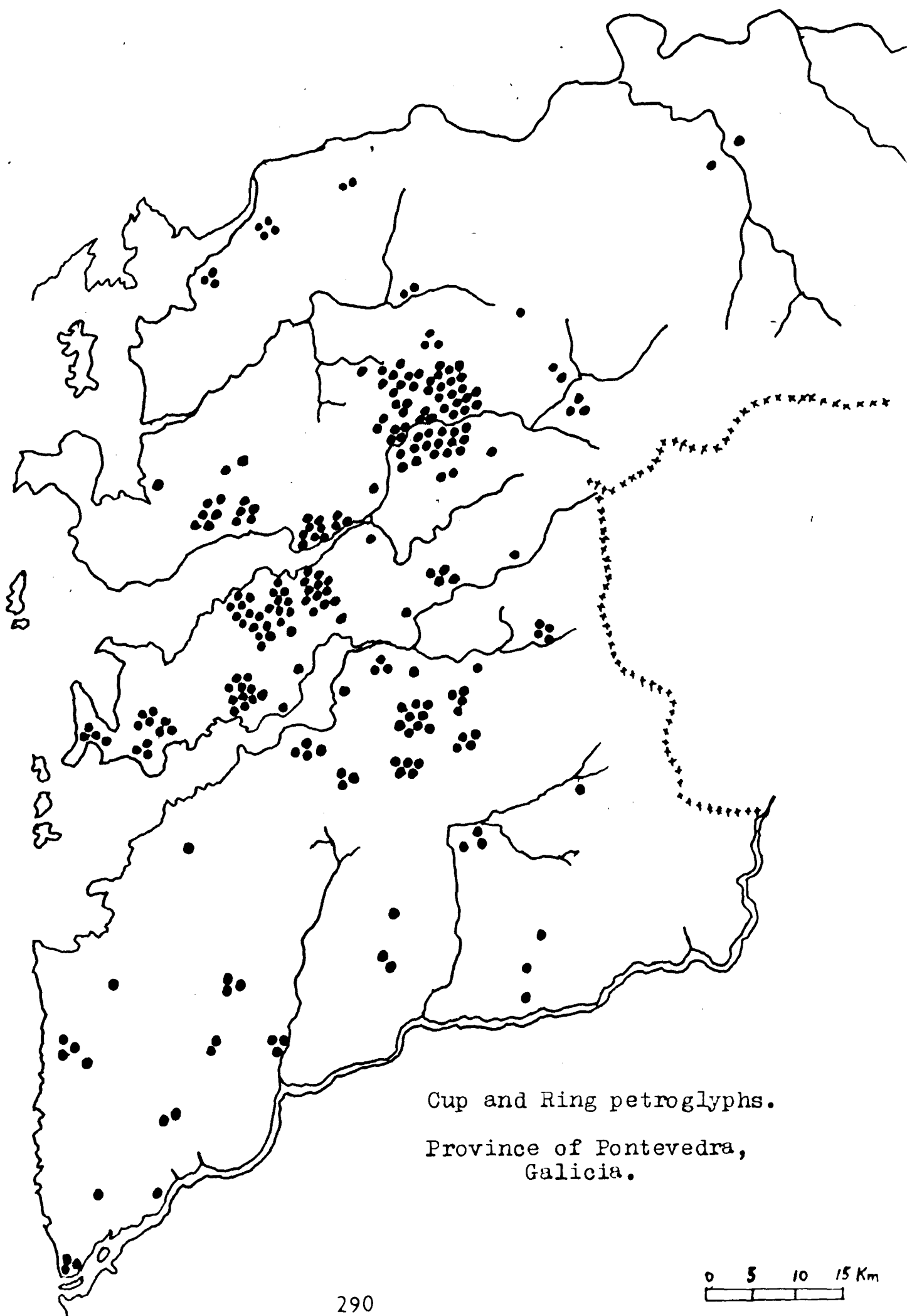


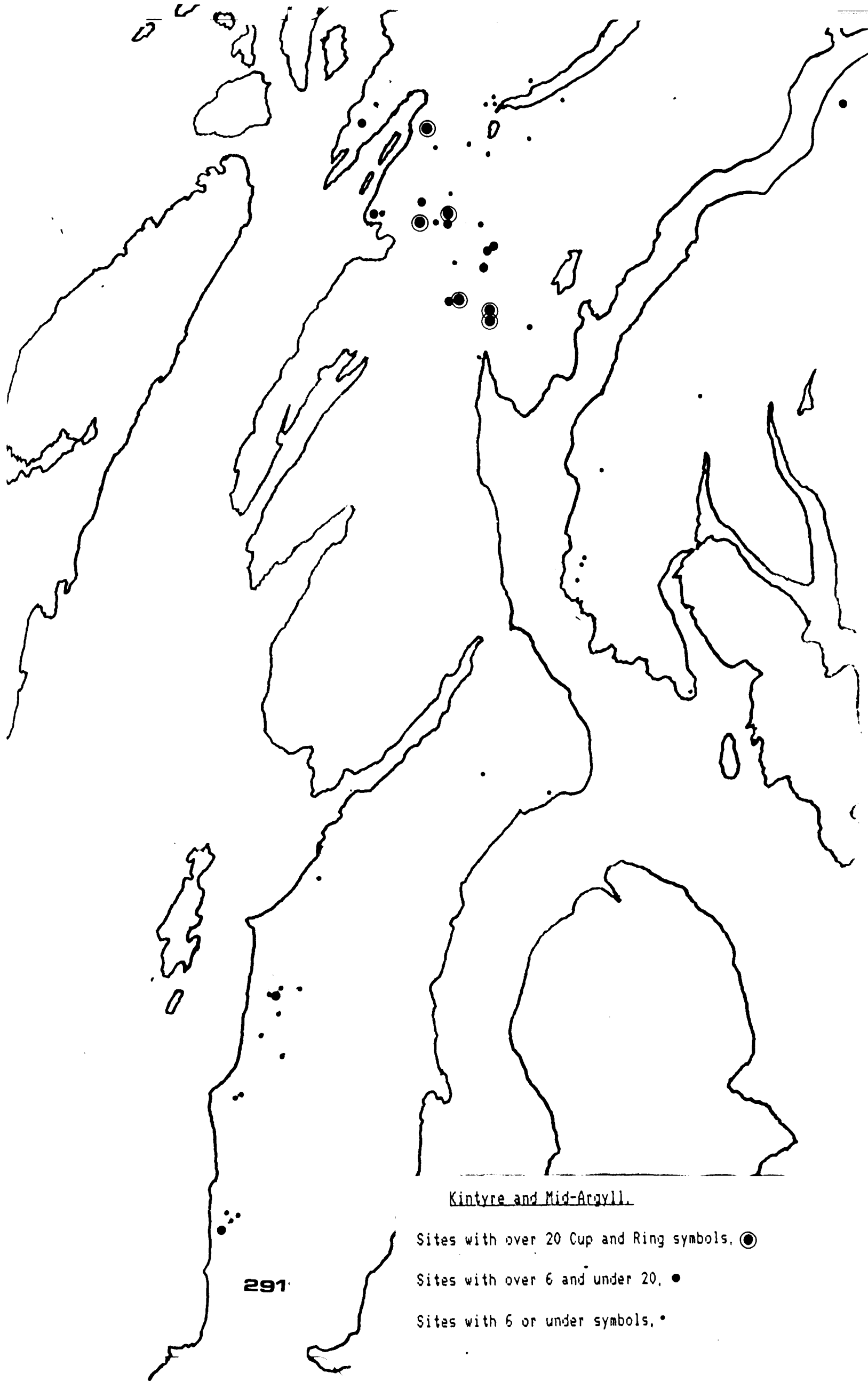
Major areas of Cup and  
Ring sites: one dot may  
indicate a number of  
sites.



Deer petroglyphs.  
Province of Pontevedra.  
Galicia.







Kintyre and Mid-Argyll.

Sites with over 20 Cup and Ring symbols. ⊙

Sites with over 6 and under 20. ●

Sites with 6 or under symbols. •



Kintyre and Mid-Argyll

Sites where the greatest number of concentric rings on a symbol is over two, ●

Sites where the greatest number is two, •

Sites where the greatest number is one, •

### BIBLIOGRAPHY

- ABERCROMBY, J. 1912. Bronze Age Pottery of Great Britain and Ireland Clarendon Press Oxford.
- ADAMS, M. J. 1973. Structural analysis of village art. American Anthropology 75, 265-79.
- ADAMS, M. J. 1983. Where two dimensions meet, the Kuba of Zaire. In D. Washburne (ed) Structure and Cognition in Art, 40-55. Cambridge University Press.
- ALLEN, G. A. and SANTOS, A. P. 1980. Grabados Rupestres de la Provincia de Pontevedra. Museo de Pontevedra, Spain.
- ALLEN, J. R. 1879. The prehistoric rock sculpture of Ilkley. Journal of the British Archaeological Association 35, 15-25.
- ALLEN, J. R. 1881. Notes on some undescribed stones with cup markings in Scotland. Proceedings of the Society of Antiquaries of Scotland 16, 79.
- ALLEN, J. R. 1896. 'Cup and Ring' Sculptures on Ilkley Moor. Reliquary 2, 67-83.
- ANATI, E. G. 1963. New petroglyphs at Derrynablaha, County Kerry, Ireland. Journal of the Cork History and Archaeological Society 68, 1-15.
- ANATI, E. G. 1968. Arte Rupestre Nelle Regioni Occidentali Della Penisola Iberica. Centro Camuno di Studi Preistorici, Capo di Ponti, Italy.
- ANATI, E. G. 1976. Evolution and Style. Centro Camuno di Studi Preistorici, Capo di Ponti, Italy.
- ANATI, E. G. 1977. Methods of Recording and Analysing Rock Engravings. Studi Camuni 7, Capo di Ponte, Italy.
- ANDERSON, R. S. G. 1921. Rock sculpture at Gallows Outon. Proceedings of the Society of Antiquaries of Scotland 56, 34-44.
- ANDERSON, R. S. G. 1926. Notes on two cup and rings in the Stewartrey. Transactions of the Dumfries and Galloway Natural History and Antiquarian Society 14, 140-3.
- ANDERSON, R. L. 1979. Art in Primitive Society. Prentice Hall.
- ARNAL, J. 1976. Les Statues-Menhirs, Hommes et Dieux. Éditions Des Hespérides.
- ARNOLD, D. E. 1983. Design structure and community organisation in Quinoa, Peru. In D. Washburne (ed) Structure and

- Cognition in Art, 56-73. New Directions in Archaeology, Cambridge University Press.
- ASCHER, R. 1961. Analogy in archaeological interpretation. South Western Journal of Anthropology 17, 317-25.
- ASHBEE, P. 1958. The excavation of Tregulland Barrow. Antiquaries Journal 38, 174-196.
- ATKINSON, R. J. C. 1968. Old mortality, some aspects of burial and population in neolithic England. In J. M. Coles and D. D. A. Simpson (eds) Studies in Ancient Europe, 83-93. Leicester University Press.
- AZEVEDO, W. L. 1973. Mask makers and myth in Western Liberia. In A. Forge (ed) Primitive Art and Society 126-50. Oxford University Press.
- BAILDON, W. P. 1909. Cup and Ring carvings; Some Remarks on their classification and a new suggestion as to their origin and Meaning. Archaeologia 61, 361-380.
- BATESON, G. 1973. Steps To an Ecology of Mind. Paladin.
- BAYNES, K. 1975. Art in Society. Lund Humphries
- BECKENSALL, S. 1983. Northumberland Prehistoric Carvings. Pendulum Publications.
- BEDNARIK, R. G. 1980. The potential of rock patination analysis in Australian Archaeology. The Artifact 5, 47-77.
- BERNDT, R. M. 1971. Some methodological considerations in the study of Australian Aborigine art. In C. F. Jobling (ed) Art and Aesthetics in Primitive Societies 99-126. E. P. Dutton.
- BERTILSSON, U. 1987. The Rock Carvings of Northern Bohuslän. Stockholm Studies in Archaeology 7.
- BESCHEL, R. 1961. Dating rock surfaces by lichen growth and its application to glaciology and physiology (lichenometry). Geology of the Arctic 2, 1044-1062.
- BIEBUYCK, D. 1973. The Lega; Art Initiation and Moral Philosophy. Berkeley California University Press.
- BINFORD, L. R. 1983. In Pursuit of the Past, 83 and 100. Thames and Hudson.
- BLACKWOOD, B. 1961. Comment on Haselbergers method of studying ethnological art. Current Anthropology 2, 360.
- BOAS, F. 1955. Primitive Art. Dover Publications, New York.

- BOLLETTINO DEL CENTRO CAMUNO DI STUDI PREISTORICI 22, 1985.  
Valcamonica Symposium 1984, New Horizons in  
Research. Recommendations. 137-138.
- BRADLEY, R. 1984. The Social Foundations of Prehistoric Britain.  
Longmans.
- BREMER, W. 1926. Notes on the Holywood Stone. Journal of the Royal  
Society of Antiquaries of Ireland 56, 51.
- BRENNAN, M. 1983. The Stars and the Stones. Thames and Hudson.
- BREUIL, H. and MACALISTER, R. A. S. 1921. A study of the chronology of  
Bronze Age sculpture in Ireland, Proceedings of the  
Royal Irish Academy 36, 1-9.
- BREUIL, H. 1934. Presidential address. Proceedings of the Prehistoric  
Society 8, 289-322.
- BREUIL, H. 1952. Four Hundred Centuries of Cave Art. 21-24. Centre  
D'Etudes de Documentation Prehistoriques,  
Montignac, Dordogne.
- BOURDIEU, P. 1971. Intellectual Fields and Creative Project. In  
M. F. Young (ed) Knowledge and Control 161-188. Open  
University.
- BROTHWELL, D. R. and KRZANOWSKI, W. 1974. Measurements of the cranium  
vault, Neolithic Beaker and Iron. Journal of  
Archaeological Science 74.1, 249-60.
- BROTHWELL, D. R. 1976. Beyond Aesthetics. Thames and Hudson.
- BROWNE, G. F. 1921. On Some Antiquities in the Neighbourhood of  
Dun Echt House Aberdeenshire. Cambridge University Press.
- BURGESS, C. 1980. The Age of Stonehenge. J. M. Dent and Sons Ltd.
- BURL, A. 1976. The Stone Circles of the British Isles. Yale  
University Press.
- BURL, A. 1979. Prehistoric Avebury. Book Club Associates, London.
- CAMPBELL, M. SCOTT, J. G. and PIGGOTT, S. 1960. The Badden cist slab.  
Proceedings of the Society of Antiquaries of  
Scotland 94, 46-61.
- CAMPBELL, M. and SANDEMAN, M. 1961. Mid-Argyll, an archaeological  
survey. Proceedings of the Society of Antiquaries of  
Scotland. 95.
- CAPRA, F. 1973. The Tao of Physics. Paladin.
- CHILD, H. and COLLES, D. 1971. Christian Symbols, Ancient and  
Modern. G. Bell and Sons.
- CHILDE, V. G. 1935. The Prehistory of Scotland. London

- CHILDE, V. G. 1941 The History of Civilisation; a critique of Hulton Webster's History. Antiquity 15, 1-14.
- CHILDE, V. G. 1942 Some notable prehistoric and medieval monuments. Proceedings of the Society of Antiquaries of Scotland 77, 37-38.
- CHILDE, V. G. 1956. Piecing Together the Past. Routledge Kegan Paul.
- CHILDE, V. G. 1959. Ancient Monument Guide, Scotland 6, 28-29.
- CHRISTISON, D. 1903. The geological source of the standing stones in Argyll. Proceedings of the Society of Antiquaries of Scotland 38, 123-148.
- CLARK, G. 1957. Archaeology and Society. Methuen, London.
- CLARK, G. 1962. Prehistoric England. B. T. Batsford Ltd.
- CLARKE, D. L. 1970. The Beaker Pottery of Great Britain and Ireland. Cambridge University Press.
- CLARKE, D. L. 1978. Analytical Archaeology. Methuen, London.
- CLARKE, D. V. COWIE, T. G. and Foxon, A. 1985. Symbols of Power. National Museum of Antiquities, Scotland. H. M. S. O.
- CLARK, J. G. D. 1953. Archaeological theories and interpretation. In A. L. Kroeber (ed) Anthropology Today 343-60. Chicago.
- CLEGG, J. 1979. Science theory and Australian prehistoric art. Mankind 12, 1, 42-50.
- CLEGG, J. 1987. Style and Tradition at Sturt's Meadows. World Archaeology 19, 2, 236-55.
- COCHRANE-PATRICK, R. W. 1886. The rock at Blackshaw. Proceedings of the Society of Antiquaries of Scotland 21, 143-151.
- COFFEY, G. 1977. Newgrange. Dolphin Press.
- COLES, F. R. 1894. Cup and Rings in the Stewartry of Kirkudbright. Proceedings of the Society of Antiquaries of Scotland 29, 67-91.
- COLES, F. R. 1898. Cup and ring marked stones. Proceedings of the Society of Antiquaries of Scotland 33, 367-372.
- COLES, F. R. 1902. Notes on some hitherto undescribed Cup and Ring marked stones Proceedings of the Society of Antiquaries of Scotland 37, 216-230.
- COLES, F. R. 1905. Unrecorded Cup and Ring marks in various localities. Proceedings of the Society of Antiquaries of Scotland 40, 318-327.

- COLES, J. M. 1959. Scottish Late Bronze Age Metalwork: Typology, Distributions and Chronology. Proceedings of the Society of Antiquaries of Scotland 93, 15-134.
- COLES, J. M. 1963. Scottish Middle Bronze Age Metalwork, Proceedings of the Society of Antiquaries 97, 82-156.
- COLES, J. M. 1968. Scottish Early Bronze Age Metalwork, Proceedings of the Society of Antiquaries of Scotland 101, 1-110.
- COLES, J. M. 1965. Derrynablaha shield Proceedings of the Prehistoric Society. 374-5.
- COLES, J. M. and SIMPSON, D. D. A. 1968. Studies in Ancient Europe. Leicester University Press.
- COLES, J. M. and HARDING, A. F. 1979. The Bronze Age in Europe. Methuen.
- COLLINGWOOD, R. G. 1970. The Principles of Art. Oxford University Press.
- COLVILLE, D. 1929. Notes on the standing stones of Kintyre. Proceedings of the Society of Antiquaries of Scotland 64, 301-321.
- CONKEY, M. W. 1978. Style and information in cultural evolution, towards a predictive model for the Paleolithic. In C. L. Redman, M. J. Bergman, E. Curtin, W. Y. Langhorne, N. M. Versaggi, J. C. Wanser. (eds) Social Archaeology Beyond Subsistence and Dating, 61-85. Academic Press, New York.
- CONKEY, M. W. 1982. Boundedness in art and society. In I. Hodder (ed) Symbolic and Structural Archaeology. 115-128. Cambridge University Press.
- COWLING, E. T. 1936. Cup and Ring markings to the north of Otley. Yorkshire Archaeological Journal 33, 291-297.
- CRAW, H. 1928. On a jet necklace from a cist at Potalloch, Argyll. Proceedings of the Society of Antiquaries of Scotland 63, 154-183.
- CRAW, H. 1929. Excavations at Dunadd and Potalloch estates. Proceedings of the Society of Antiquaries of Scotland. 64, 131-134.
- CRAWFORD, O. G. S. 1957. The Eye Goddess. Phoenix House Ltd. London.
- CROCE, B. 1965. Guide to Aesthetics. The Bobbs-Merrill Co.
- CROZIER, I. R. and REA, L. 1940. Ballauns and Basin stones. Ulster Journal of Archaeology 3, 104-114.
- DANIEL, G. 1958. The Megalith Builders of Western Europe. Hutchinsons.
- DANIEL, G. 1986. Some small harvest. Thames and Hudson.



- DARK, P. 1973. Kilenge big man art. In A. Forge (ed) Primitive Art and Society 49-69. Oxford University Press.
- DAVIDSON, J. H. 1934. A Bronze Age cemetery, Knappers, Killbowie, Dumbartonshire. Proceedings of the Society of Antiquaries of Scotland. 69, 352-382.
- DEVEREAUX, G. 1971. Art and mythology, a general theory. In C. F. Jobling (ed) Art and Aesthetics in Primitive Society. 193-224 E. P. Dutton.
- DICKIE, K. M. 1963. The carved hands boulder at Barnakill. Proceedings of the Society of Antiquaries of Scotland. 97, 249.
- DISCOVERY and EXCAVATION. 1973. Ormaig. Scotland p12.
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| " | " | " | Finchairn and Templewood. Scotland p13. |
| " | " | " | Fife and Torryburn. Scotland p26.       |
| " | " | " | Slab at Jedburgh, Scotland p27.         |
| " | " | " | North Blochairne stone. Scotland p51    |
- DODDS, M. H. 1899. History of Northumberland 5, 344. Reid and Co. Newcastle
- DONNE, J. B. 1978. African art and Paris studios, 1905-20. In Greenhalgh and V. Megaw (eds) Art in Society 105-20. Duckworth.
- DORAN, J. 1969. Systems theory, computer science and archaeology. World Archaeology 1, 289-298.
- DOUGLAS, M. 1970. Natural Symbols. Barrie and Jenkins, London.
- DOUGLAS, C. 1876. Anniversary Address. History of the Berwickshire Naturalist Club 8, 212-13.
- DRAGOVITCH, D. 1986. Minimum age of some desert varnish near Broken Hill N. S. W. Search 17, 149-151.
- DUBELAAR, C. N. 1986. South American and Caribbean Petroglyphs. Foris Publications.
- DUBOIS, J. M. 1985. The written stones of Quebec history and mythology. Bulletino del Centro Camuno di Studi Preistorici 22, 63-66.
- DUNNELL, R. C. 1978. Style and function.. A fundamental dichotomy. American Antiquity 43, 192-200.
- DURKHEIM, E. 1964. The Division of Labour in Society. Free Press.

- DURKHEIM, E. 1976. The Elementary Forms of Religious Life. George Allen and Unwin.
- EDWARDS, A. 1934. Sculptures on Traprain Law, E. Lothian. Proceedings of the Society of Antiquaries of Scotland 69, 122-137.
- ELKIN, A. P. 1961, Art and meaning, a review article. Oceania 32, 54-9.
- EMMONS, G. T. 1914. Portraiture among north coast Pacific tribes. American Anthropology 16, 59-67.
- EOGAN, G. 1984, Excavations at Knowth 1. The Royal Irish Academy.
- EOGAN, G. 1986, Knowth. Thames and Hudson.
- EVANS, J. G. LIMBREY, S. and CLEERE, H. 1975. The Effect of Man on the Landscape in the Highland zone. CBA. Research Report 11..
- FARIS, J. C. 1972. Nuba Personal Art. Duckworth.
- FARIS, J. C. 1983. From form to content in the structural study of aesthetic systems. In D. Wahburne (ed) Structure and Cognition in Art 90-112. New Directions in Archaeology, Cambridge University Press.
- FARMER, M. F. 1955. Awatovi bows. Plateau 28, 1. Museum of North Arizona, Flagstaff.
- FEACHEM, R. 1963. A Guide to Prehistoric Scotland. B. T. Batsford Ltd.
- FEATHER, S. 1964. Galician deer carvings. Proceedings of the Society of Antiquaries of Scotland 98, 315-317.
- FERNANDEZ, J. W. 1966. Principals of apposition and vitality in Fang aesthetics. Journal of Aesthetics and Art Criticism 25, 53-64.
- FETT, E. N. and FETT, P. 1979. Relations West Norway - Western Europe documented in petroglyphs. Norwegian Archaeological Review 12. 2, 65-105.
- FIRTH, R. 1973. Tikopia art and society. In A. Forge (ed) Primitive Art and Society 25-48. Oxford University Press.
- FLEMING, A. 1969. The Myth of the Mother Goddess. World Archaeology 1, 247-261.
- FORGE, A. 1973. Primitive Art and Society. Oxford University Press.
- FORGE, A. 1977. Schematization and meaning. In P. J. Ucko (ed) Form in Indigenous Art 28-32. Duckworth.
- FOUCAULT, M. 1984. Las Palabras y Las Cosas. Una Arqueologia de Las Ciencias Humanas. Ed. Siglo XXI. Mexico. (Orig.)

Les Mots et Les Choses. Une Archeologie des sciences humains. Ed. Gallimard. Paris. 1966

- FRANKLIN, N. R. 1986. Stochastic vs emblematic; an archaeologically useful method for the analysis of style in Australian rock art. Rock Art Research 3, 2, 121-40.
- FRITZ, J. M. 1978. Paleopsychology today. Ideation systems and human adaption in prehistory. In C. L. Redman (ed) Social Archaeology beyond subsistence dating, 37-59. Academic Press. New York.
- GEERTZ, C. 1975. The Interpretation of Cultures. Hutchinson.
- GEERTZ, C. 1983. Local Knowledge. Basic Books, New York.
- GERLOFF, S. 1975. The early bronze age dagger in Great Britain and reconsideration of the Wessex culture. Prähist. Bronzefunde 6: 2. Munich.
- GIEDON, S. 1962. The Eternal Present. Bollingen Series 35. 6. 1. Pantheon Books.
- GIMBUTAS, M. 1965. Bronze Age Cultures in Central and Eastern Europe. The Hague. Mouton.
- GIMBUTAS, M. 1982. The Goddesses and Gods of Old Europe. Thames and Hudson.
- GOBERNA, F. J. C. 1984. Petroglifos del Litoral Sur de la Ria de Vigo Publicaciones del Museo Municipal, 'Quinones de Leon', (Castrelos) Vigo. No 8.
- GOLDWATER, R. 1973. Art history and anthropology. In A. Forge Primitive Art and Society 1-10. Oxford University Press.
- GOMBRICH, E. H. 1960. Art and Illusion. Phaidon, London.
- GOODMAN, N. 1971, Languages of art, an approach to a theory of symbols. 2nd Edition Bobbs Merrill, Indianapolis.
- GOODNOW, J. J. 1977. Schemas and variations, concepts and techniques from the analysis of children's drawing. In P. J. Ucko (ed) Form in Indigenous Art 66-72. Duckworth.
- GOULD, R. A. 1980. Living Archaeology. Cambridge University Press.
- GRANT, C. BAIRD, J. W. and PRINGLE, J. K. 1968. Rock Drawings of the Coso Range. Maturango Museum, China Lake, California.
- GRÄSLUND, B. 1974. Relativ datering Tor 16, 248. Institutionen för arkeologi, Gustavianum, Uppsala.
- GRÄSLUND, B. 1976. Relative Dating C. U. P.

- GRAVES, C. 1860. On a previously undescribed class of monuments. Transactions of the Royal Irish Academy 24, 421-31.
- GRAVES, J. 1876-8. On Cup and Circle sculptures as occurring in Ireland. Journal of the Kilkenny Archaeological Society 4, 283-296.
- GREBINGER, P. 1978. Discovering Past Behaviour. Gordon and Breach.
- GREENHALGH, M. 1978. European interest in non - European, the sixteenth century and pre-Columbian art and architecture. In M. Greenhalgh and V. Megaw (eds) Art in Society 89-103. Duckworth.
- GREENHALGH, M. and MEGAW, V. 1978. Art in Society. Duckworth.
- GREENWELL, W. 1877. British Barrows. O'Clarendon Press.
- GRINSELL, L. V. 1957. Cups and footprints on a cist slab. Proceedings of the Prehistoric Society 23, 231-32.
- GUIDON, N. and PRESSIS, A. M. 1981. Contributions Methodologiques en Prehistoire 1. Ecole des Hautes Etudes en Science Sociales, Paris.
- HADINGHAM, E. 1974. Ancient Carvings in Britain, a Mystery. Grimstone Press.
- HADINGHAM, E. 1975. Circles and Standing Stones. Heinemann.
- HAGGART, D. 1894. Notice of the discovery of Cup and Ring sculpturings at Duncrook, near the Falls of Lochay in Glen Lochay. Proceedings of the Society of Antiquaries of Scotland 29, 94-95.
- HAMILTON, G. 1886. Notices of rock sculpturings of cups and rings in Kirkcudbrightshire. Proceedings of the Society of Antiquaries of Scotland 21, 151-160.
- HANSON, A. F. 1983. When the map is the territory, Art in Maori culture. In D. Washburn (ed) Structure and Cognition in Art 74-89. New Directions in Archeology, Cambridge University Press.
- HARDIN, M. A. 1983. The structure of Tarascan pottery. In D. Washburn (ed) Structure and Cognition in Art 8-24. New Directions in Archaeology, Cambridge University Press.
- HARDY, J. and DAND, S. 1882. On the incised rocks at Morwick. History of the Berwick Naturalists Club 10, 343-347.
- HARLEY, G. W. 1950. Masks as agents of social control in N.E. Liberia. Peabody Museum Papers 32. 2.
- HAUSER, A. 1962. The Social History of Art. Routledge Kegan and Paul

- HAWKES, C. 1954. Archaeology theory and method. Some suggestions from the old world. American Anthropology 56, 155-168.
- HEDGES, J. D. 1986. The Carved Rocks on Rombaulds Moor. West Yorkshire Metropolitan County Council.
- HERRITY, M. 1974. Irish Passage Graves. Irish University Press.
- HÉRON DE VILLEFOSSE, A. 1888. Figurine en Terre Blanche. Revue Archéologique 11.3, 144-159.
- HEYWOOD, N. 1888. The Cup and Ring stones on the Panaorama rocks, near Rombald's Moor, Ilkley, Yorkshire. Transactions of the Lancashire and Cheshire Antiquarian Society. 6, 127-128.
- HILL, R. and HILL, B. 1974. Indian Petroglyphs of the Pacific North West. Hancock House Publishers Ltd.
- HILLIER, B. LEMAN, A. STANSALL, P. BEDFORD, M. 1976. Space syntax. Environment and Planning B 3, 147-185.
- HODDER, I. and ORTON, C. 1976. Spatial Analysis in Archaeology. Cambridge University Press.
- HODDER, I. 1982. The Present Past. B. T. Batsford Ltd.
- HODDER, I. 1982. Symbolic and Structural Archaeology. Cambridge University Press.
- HODDER, I. 1982. Symbols in Action. Cambridge University Press.
- HODDER, I. 1986. Reading the Past. Cambridge University Press.
- HOGG, A. H. A. and HOGG, N. 1956. Doddington and Horton Moors. Archaeologia Aeliana 34, 142-9.
- HOLM, B. 1965. North West Coast Indian Art an Analysis of Form. University of Washington Press.
- HORTON, R. 1965. Kalabari Sculpture. Lagos, Department of Antiquities.
- HOWELLS, W. W. 1937. The Iron Age population of Great Britain. American Journal of Physical Anthropology 23, 19-29.
- HYMES, D. 1969. Linguistic models in archaeology. In V. C. Gardin (ed) Archeologie et Calculateurs, Editions du Centre Reserche Scientifique, Paris
- JACKSON, P. J. 1982. The Petroglyphs of the River Vaupes, Colombia. Bollettino del Centro Camuno di Studi Preistorici 19, 83-96.
- JACOBSTHAL, P. 1938. Celtic rock carvings in northern Italy and Yorkshire. Society for the Promotion of Roman Studies.

- JOBLING, C. F. 1971. Art and Aesthetic in Primitive Societies. E. P. Dutton.
- JOLLY, W. 1881. On cup marked stones in the neighbourhood of Inverness, with an appendix on cup marked stones in the western islands. Proceedings of the Society of Antiquaries of Scotland 16, 300-396.
- KENDRICK, T. D. 1927. The Druids. Methuen.
- KONIG, M. E. P. 1973. Am Anfang der Kultur. Gebr. Maun Verlag. Berlin.
- KORN, S. M. 1978. The formal analysis of visual systems as exemplified by a study of Abelam (Papua New Guinea paintings.) In M. Greenhalgh and V. Megaw (eds) Art in Society 161-173, Duckworth.
- KRAMER, C. 1979. Ethnoarchaeology. Columbia University Press.
- LACAILLE, A. D. 1954. Stone Age in Scotland. Oxford University Press.
- LACEY, B. 1983. Archaeological Survey of County Donegal. Donegal County Council, Lifford.
- LAIDLAW, W. 1904. Sculptured and inscribed stones in Jedburgh and vicinity. Proceedings of the Society of Antiquaries of Scotland 39, 21-54.
- LAMING-EMPERAIRE, A. 1962. La Signification de la Art Rupestre Palaeolithic. Picart, Paris.
- LATHRAP, D. W. 1983. Recent Shipibo - Coinbo ceramics and their implications for archaeology. In D. Washburn (ed) Structure and Cognition in Art, 25-39. New Directions in Archaeology, Cambridge University Press.
- LAYTON, R. 1981. The Anthropology of Art. Granada Publishing.
- LEACH, E. 1976. Culture and Communication. Cambridge University Press.
- LEE, G. 1986. Easter Is. recent archaeological research. Bollettino del Centro Camuno di Studi Preistorici 23, 69-90.
- LEISNER, G. and LEISNER, V. 1943. Die Megalithgräber der Iberischen Halbinsel. W. de Gruyter, Berlin.
- LEROI-GOURHAN, A. 1968. The Art of Prehistoric Man. Thames and Hudson.
- LETHBRIDGE, T. C. 1957. Gogmagog, the Buried Gods. Routledge Kegan and Paul.
- LÉVI-STRAUSS, C. 1966. The Savage Mind. Weidenfield and Nicolson.

- LÉVI-STRAUSS, C. 1968. Structural Anthropology. Allen Lane, Penguin Press.
- LLAMAZARES, A. M. 1986. A Semiotic approach in rock art analysis. In Archaeological Objectivity in Interpretation 1. Papers of the World Archaeological Congress, Southampton, Allen and Unwin.
- Lommel, A. 1967. Shamanism: the beginnings of art. Mc Graw Hill, New York.
- LORBLANCHET, M. 1977. From naturalism to abstraction in European prehistoric rock art. In P.J.Ucko (ed) Form in Indigenous Art 44-58. Duckworth.
- MCGHEE, R. 1976. Different artistic production in the Eskimo cultural tradition. Current Anthropology 17, 203-20.
- MACKENZIE, J. B. 1894. Notice of the discovery of incised Cup and Ring sculpturings at Braes of Balloch near Taymouth castle. Proceedings of the Society of Antiquaries of Scotland 29, 94-5.
- MACKINTOSH, N. W. G. 1977. Beswick creek cave two decades later, a reappraisal. In P.J.Ucko (ed) Form in Indigenous Art 191-197. Duckworth.
- M' LAREN, T. 1919. The ancient remains of Birnham, Perthshire. Proceedings of the Society of Antiquaries of Scotland 54, 206-7.
- MACWHITE, E. 1946. A new view on the Irish Bronze Age rock scribings. Journal of the Royal Society of Antiquaries of Ireland 76, 59-80.
- MANN, L. M. 1921. Ancient Sculpturings in Tiree. Proceedings of the Society of Antiquaries of Scotland 56, 118-126.
- MANN, L. M. 1938. Earliest Glasgow, A Temple of the Moon. Mann Publishing Company Ltd.
- MARSHACK, A. 1972. The Roots of Civilisation. McGraw Hill Book Co.
- MARSHALL, D. N. 1974 Carved Stone Balls, Proceedings of the Society of Antiquaries of Scotland. 108, 40-72.
- MAUSS, M. 1947. Manuel d'Ethnographie. Payot. Paris.
- MEGAW, J. V. S. and SIMPSON, D. D. A. 1979. Introduction to British Prehistory. Leicester University Press.
- MILBURN, M. 1980-82. Cup and ring marks in the Sahara. Current Archaeology 7. 72-83.
- MORPHY, F. 1977. The social significance of schematisation in N.W. coast American Indian art. In P.J.Ucko (ed) Form in Indigenous Art 73-76. Duckworth.

- MORRIS, R. W. B. and BAILEY, D. C. 1964. Cup and ring marks and similar sculptures S.W. Scotland, a survey part 1. Proceedings of the Society of Antiquaries of Scotland 98, 150-72.
- MORRIS, R. W. B. 1967. Cup and ring marks and similar sculptures of Scotland, a survey of S. Counties, part 2 Proceedings of the Society of Antiquaries of Scotland 100, 47-78.
- MORRIS, R. W. B. 1970. The Petroglyphs at Achnabreck, Argyll. Proceedings of the Society of Antiquaries of Scotland 103, 33-56.
- MORRIS, R. W. B. and MILBURN, M. 1976. Some Cup and Ring marks of Western Air. Almogaren 7, 143.
- MORRIS, R. W. B. 1977. The Prehistoric Rock Art of Argyll. Dolphin Press.
- MORRIS, R. W. B. 1979. The Prehistoric Rock Art of Galloway and the Isle of Man. Blandford Press.
- MORRIS, R. W. B. 1981. The Prehistoric Rock Art of Southern Scotland. B. A. R. British series 86.
- MORWOOD, M. J. 1980. Time space and prehistoric art. A principal components analysis. Archaeology and Physical Anthropology. Oceania 15, 98-109.
- MUENSTERBERGER, W. 1971. Some elements of artistic creativity among primitive peoples. In C. F. Jobling (ed) Art and Aesthetics in Primitive Societies. E. P. Dutton.
- MUNN, N. D. 1966. Visual categories. An approach to the study of representational systems. American Anthropology 68, 936-50.
- MUNN, N. D. 1973a. The spacial presentation of cosmic order in Walbiri iconography. In A. Forge (ed) Primitive Art and Society 193-220.
- MUNN, N. D. 1973b. Walbiri Iconography. Cornell University Press.
- NEWBIGGIN, E. R. 1932. Incised rocks at Lordenshaws. Archaeologia Aeliana 9. 4th series, 50-57.
- NORDBLADH, J. and ROSVALL, J. 1975. Rock Carvings, Kville, Bottna. Studies in North European Archaeology 13. The Antiquarian Society Gothenburg, and Archaeology Museum in Gottenburg.
- NORDBLADH, J. 1978. Images as messages in society. Prolegomena to the study of Scandinavian petroglyphs and semiotics. In K. Kristiansen and C. Paludan-Müller (eds) Studies in Scandinavian Prehistory and Early History 1,



- 63-78. New Directions in Scandinavian Archaeology, The National Museum of Denmark.
- NORDBLADH, J. 1981. Knowledge and Information in Swedish Petroglyph Documentation. In C.A. Moberg (ed) Similar Finds, Similar Interpretations, G1-79. University of Gothenburg.
- OFFICER, K. 1986. Reply to Franklin. Rock Art Research 3.2, 127-9.
- OSTER, G. 1970. Phosphenes. Scientific American 222, 2, 83-87.
- OTTEN, C. M. 1987. Anthropology and Art. University of Texas Press.
- PARKINGTON, J. 1969. Symbolism in Palaeolithic Cave Art. Dept. of Archaeology, University of Capetown.
- PAULME, D. 1973. Adornment and Nudity in Tropical Africa. In A. Forge (ed) Primitive Art and Society 11-24. Oxford University Press.
- PÉÑA SANTOS, A. and VASQUEZ VARELA, J. M. 1979. Los Petroglifos Gallegos. Cuadernos del Seminario de Estudios Ceramicos de Sargadelos. Edicions do Castro, Sada, La Coruña.
- PEYRONY, D. 1934. La Ferrassie, Mousterien, Perigordien, Aurignacien. Prehistoire 3, 1-93.
- PESSIS, A. M. 1986. Reply to Franklin. Rock Art Research 3.2, 129-30.
- PIGGOTT, S. 1938. The Early Bronze Age culture in Wessex. Proceedings of the Prehistoric Society 4, 52-106.
- PIGGOTT, S. 1939. The Bradbury Barrow Dorset and its carved stone. Antiquaries Journal 19, 291-299.
- PIGGOTT, S. and POWELL, T. G. E. 1948. Excavation of three Megalithic chambered tombs. Proceedings of the Society of Antiquaries of Scotland 83, 103-161.
- PIGGOTT, S. 1954. Neolithic Cultures of the British Isles. Cambridge University Press
- PIGGOTT, S. 1973. The Dalladies Longbarrow, N.E. Scotland. Antiquity 47, 32-36.
- PIGGOTT, S. 1982. Scotland Before History. Edinburgh University Press.
- PLOG, S. 1983. Analysis of style in artefacts. Annual Review of Anthropology 12, 125-42.
- POWELL, T. G. E. and DANIEL, G. E. 1956. Barclodiad y Gawres. Liverpool University Press.

- POWELL, T. G. E. 1960. Megalithic and other Art; Centre and West. Antiquity 34, 180-190.
- RAISTRICK, A. 1936. Cup and ring marked rocks of West Yorkshire. Yorkshire Archaeological Journal 32, 33-42.
- RANKIN, D. R. 1872. Notice of a sculptured stone cist lid, and clay urn, found on Carnsworth Moor. Proceedings of the Society of Antiquaries of Scotland 10, 61-63.
- RAPPAPORT, R. A. 1968. Pigs for the Ancestors. New Haven, Yale University Press.
- REDMAN, C. L. 1973. Research and Theory in Current Archaeology. James Wiley and sons, New York.
- REDMAN, C. L. BERMAN, M. J. CURTIN, E. V. LANGHORNE, W. T. VERSAGGI, N. M. and WANSER, J. C. 1978. Social Archaeology, beyond subsistence dating. Academic Press, New York.
- REICHEL-DOLMATOFF, G. 1971. Amazonian Cosmos. Chicago
- REICHEL-DOLMATOFF, G. 1975. The Sharman and the Jaguar; a Study of Narcotic Drugs among the Indians of Colombia. Philadelphia.
- REICHEL-DOLMATOFF, G. 1978. Drug induced optical sensations and their relationship to applied art among some Colombian Indians. In M. Greenhalgh and V. Megaw (eds) Art in Society. Duckworth.
- ROE, F. 1968. Stone Mace Heads and the latest neolithic cultures of the British Isles. In J. M. Coles and D. D. A. Simpson (eds) Studies in Ancient Europe, 145-172.
- ROHEIM, G. 1925. Australian Totemism. George Allen Unwin,
- ROHEIM, G. 1945. The Eternal Ones of the Dream. International University Press. New York.
- ROSENFELD, A. 1977. Profile figures. Schematization of the human figure in the Magdalanian culture of Europe. In P. J. Ucko (ed) Form in Indigenous Art 90-109. Duckworth.
- ROYAL COMMISSION ON THE ANCIENT AND HISTORICAL MONUMENTS OF SCOTLAND. 1988. Argyll. An Inventory of the Ancient Monuments. VI. Mid-Argyll. H. M. S. O.
- SACKETT, J. R. 1977. The Meaning of style in Archaeology a general model. American Antiquity 42, 369-80.
- SAVORY, H. N. 1940. A Mid Bronze Age barrow at Crick, Monmouthshire. Archaeologia Cambrensis 95, 169-191.
- SCHAPIRO, M. 1953. Style. In A. L. Kroeber (ed) Anthropology Today 287-312. Chicago University Press.

- SCOTT, L. 1951. The colonisation of Scotland in the second millenium B.C. Proceedings of the Prehistoric Society 17, 16-82.
- SEGALL, M. H. 1976. Visual art: some perspectives from cross cultural psychology. In D. R. Brothwell (ed) Beyond Aesthetics 98-114. Thames and Hudson.
- SHARPLES, N. 1984. Excavations at Pierawall Quarry. Proceedings of the Society of Antiquaries of Scotland 114, 75-125.
- SHEE TWOHIG, E AND O'KELLY, M. J. 1971. The Derrynablaha Shield again. Journal of the Cork Historical and Archaeological Society 76, 72-76.
- SHEE TWOHIG, E. 1973. Techniques of Irish Passage Grave Art, In P. Kjaerum and G. E. Daniel (ed) Megalithic Graves and Ritual Jutland Archaeological Society 11, 163-72.
- SHEE TWOHIG, E. 1981. The Megalithic Art of Western Europe. Clarendon Press Oxford.
- SIEVEKING, A. 1979. The Cave Artists. Thames and Hudson.
- SIMMONS, I. AND TOOLEY, M. 1981. The Environment in British Prehistory. Duckworth.
- SIMPSON, D. D. A. 1968. Food vessels, associations and chronology. In J. M. Coles and D. D. A. Simpson (eds) Studies in Ancient Europe, 197-211. Leicester University Press.
- SIMPSON, D. D. A. AND THAWLEY, J. E. 1972. Single grave art in Britain. Scottish Archaeological Forum 4, 81-104.
- SIMPSON, J. Y. 1864. On the ancient sculpturings of the cup and ring. Proceedings of the Society of Antiquaries of Scotland 6, Appendix.
- SMITH, M. A. 1955. The limitations of inference in archaeology. Archaeological Newsletter 6. 1, 3-7.
- SOGNESS, K. 1986. A Method for recording the orientation of rock art surfaces. Bollettino del Centro Camuno di Studi Preistorici 23, 133-136.
- STEINBRING, J. DANZIGER, E. AND CALLAGHAN, R. 1987. Middle archaic petroglyphs in northern North America. Rock Art Research 4. 1, 3-9.
- STEVENSON, W. 1880. Notes on the antiquities of the Isles of Colonsay and Oransey. Proceedings of the Society of Antiquaries of Scotland 15, 113-147.
- STEWART, M. E. C. 1958. Proceedings of the Society of Antiquaries of Scotland 92, 71-84.

- TASSE, G. 1982. Petroglyphs du Bassin Parisien. 16 Supplement à Gallia Préhistoire. Ed. du Centre National de la Recherche Scientifique, Paris.
- TATE, G. 1865. The Ancient British Sculptured Rocks of Northumberland and Eastern Borders. Alnwick.
- TAYLOR, J. 1968. Early Bronze Age neck rings in Western Europe. Proceedings of the Prehistoric Society. 34, 259-266.
- THOM, A. 1968. The geometry of the cup and ring marks. Transactions of the Ancient Monuments Society 16, 77-88.
- THOM, R. 1975. Structural stability and Morphogenesis. Benjamin, New York.
- TORBRUGGE, W. 1968. Prehistoric European Art. Harry N. Abrahams, New York.
- TRUCKELL, A. E. 1961. Cup and ring marked slabs in the Cairnholy and Auchinlarie area. Transactions of the Dumfries and Galloway Natural History and Antiquarian Society. 40, 192-195.
- TURNER, J. 1965. A contribution to the history of forest clearance. Proceedings of the Royal Society of Botany 161, 343-54.
- TURNER, V. 1967. The Forest of Symbols. Cornell University Press.
- UCKO, P. J. and ROSENFELD, A. 1967 Palaeolithic cave art Weidenfeld and Nicolson, London.
- UCKO, P. J. 1977. Form in Indigenous Art. Duckworth.
- VASTOKAS, J. 1978. Interpreting Prehistoric Art, method and theory. Archaeology Notes 78, 21-4.
- VERNON, M. D. 1976. The development of visual perception in children. In D. R. Brothwell (ed) Beyond Aesthetics, 64-87.
- VOGT, E. Z. 1976. Tortillas for the Gods. Harvard University Press.
- VYNER, B. 1988. The Street House Wossit. Current Archaeology 111, 124-127.
- WAINWRIGHT, G. J. and Longworth, I. H. 1971 Durrington Walls. Excavations 1966-68. Society of Antiquaries, Report of the Research Committee. 29,
- WAINWRIGHT, N. M. 1985. Rock art conservation research in Canada. Bolletino del Centro Camino di Studi Preistorici 22, 15-35.
- WAKEMAN, W. F. 1874. On Certain Markings on Rocks Pillar Stones and other monuments observed, chiefly in County Fermanagh. Journal of the Royal Society of Antiquaries of Ireland 3, 445-474.

- WAKEMAN, W. F. 1876. The Megalithic Sepulchral Chamber of Knockmany  
Journal of the Royal Society of Antiquaries of  
Ireland 4, 95-106.
- WALKER, D AND WEST, R. G. 1848. Studies in the Vegetational History of  
The British Is. British Archaeological Association  
3, 50-52.
- WALKER, M. J. 1970. An analysis of British petroglyphs. Science and  
Archaeology 2 and 3, 30-61.
- WALKER, M. J. 1974. Schematised rock markings as archaeological  
evidence. In P. J. Ucko (ed) Form in Indigenous Art  
452-469. Duckworth.
- WARNE, C. 1848. Proceedings of the Association,  
British Archaeological Association 3, 50-52.
- WASHBURNE, D. K. 1983. Structure and Cognition in Art. New Directions  
in Archaeology, Cambridge University Press.
- WASHBURNE, D. K. 1983. Symmetric analysis of ceramic design, two  
tests of the method on Neolithic material from  
Greece and the Aegean. In D. K. Washburne (ed)  
Structure and Cognition in Art, 138-164. New  
Directions in Archaeology, Cambridge University  
Press.
- WATSON, P. J. LEBLANC, S. A. and REDMAN, C. L. 1971. Explanation in  
Archaeology. An Explicitly Scientific Approach.  
Columbia University.
- WHALLON, R. 1968. Investigations of late prehistoric social  
organisation in New York state. In L. R. Binford and  
S. R. Binford (eds) New Perspectives in Archaeology  
223-44. Aldine, Chicago.
- WHITLEY, D. S. 1982. The study of North American rock art; a case  
study from East-Central California. Ph.D.  
dissertation. Department of Anthropology,  
University of California, Los Angeles.
- WHITLEY, D. S. AND DORN, R. I. 1987. Rock art chronology in Eastern  
California. World Archaeology 19, 2, 150-64.
- WILLIAMS, D. 1974. Icon and Image. Allen Lane.
- WILLIAMS R. 1958. Culture and Society. Penguin.
- WILLIAMSON, W. C. 1834. Reminiscences of a Yorkshire Naturalist.  
Gentleman's Magazine 2, 632.
- WILLEY, P. 1953. Cultural and Social Anthropology. In Tax, Sol,  
L. C. Eiseley, I. Rouse, C. F. Voeglin (eds) An  
Appraisal of Anthropology Today 229. Chicago  
University Press.

- WILSON, G. V. 1921. Geological Survey of England and Wales, Mineral Resources. 16-19, HMSO.
- WOLHEIM, R. 1979. Pictorial style, two views. In B. Lang (ed) The Concept of Style. University of Pennsylvania Press.
- WOODWARD, P. J., 1988. Pictures of the Neolithic: discoveries from the Flagstones House excavations, Dorchester, Dorset. Antiquity 62, 235.
- YOUNG, A. 1937. Cup and ring markings on Craig Ruenshin. Proceedings of the Society of Antiquaries of Scotland 72, 143-149.
- YOUNG, M. F. D. 1971. Knowledge and Control, Collier and Macmillan.

# APPENDIX

## Comparative Mapping Figures. (see the maps in the folder.)

Lochgilphead: Sheet 55: 1: 50000

### Less than 1kl.

	CC	RC	SS	C	N	Be	OB	EB	LB	MM	Pe
Under 15m	0	1	1	0	1	0	1	1	0	0	1
15-76m	2	11	8	7	8	5	10	0	2	0	17
76-152m	0	5	5	4	0	1	4	0	2	0	8
Over 152m	0	1	1	0	0	0	1	0	0	0	0
	2	18	15	11	9	6	16	1	4	0	26

### 1-2kl.

	CC	RC	SS	C	N	Be	OB	EB	LB	MM	Pe
Under 15m	1	1	2	2	1	2	2	0	1	0	2
15-76m	13	6	11	7	9	5	3	1	5	0	6
76-152m	6	3	3	2	5	2	4	0	2	0	1
Over 152m	1	0	0	1	1	0	0	0	0	1	1
	21	10	16	12	16	9	9	1	8	1	10

2-4k1											
	CC	RC	SS	C	N	Be	OB	EB	LB	MM	Pe
Under 15m	1	1	1	2	2	0	1	1	1	2	1
15-76m	6	4	5	9	4	6	11	10	8	10	0.
76-152m	5	0	3	4	2	0	3	4	4	4	2
Over 152m	0	0	0	0	0	1	0	0	0	0	0
	12	5	9	15	8	7	15	15	13	16	3
											Total petro each level

4-20k1											
	CC	RC	SS	C	N	Be	OB	EB	LB	MM	Pe
Under 15m	2	1	0	0	0	2	0	2	2	2	0
15-76m	5	5	2	3	5	10	2	15	11	16	3
76-152m	1	4	1	2	5	9	1	8	4	8	1
Over 152m	0	0	0	0	0	0	0	1	1	0	0
	8	10	3	5	10	21	3	26	18	26	4

The Total Number of Artifacts at Various Levels.

	CC	RC	SS	C	N	Be	OB	EB	LB	MM	Pe
Under 15m	0	4	4	3	6	0	5	1	1	0	4
15-76m	6	21	15	6	9	4	9	0	3	2	26
76-152m	3	8	4	3	3	0	4	0	1	2	12
Over 152m	0	2	0	1	0	0	0	0	0	1	1
	9	35	23	13	18	4	18	1	5	5	43

CC - Chambered Cairn.

RC - Round Cairn.



SS - Standing Stone.  
C - Cists.  
N - Neolithic objects.  
Be - Beakers.  
OB - Other Bronze Age artifacts  
EB - Early Bronze Age.  
LB - Late Bronze Age.  
MM - Mining. Lead, Copper, ores.  
Pe - Petroglyphs.

Loch Awe (South): N.M. 80/90: 1:25000

Less than ½kl

	CC	RC	SS	C	B	LB	MM	Pe
Under 50m	1	0	0	0	0	0	0	0
50-100m	1	4	1	2	3	0	0	3
Over 100m	0	0	0	0	0	0	0	0
	2	4	1	2	3	0	0	3

½-1kl

	C	RC	SS	C	B	LB	MM	Pe
Under 50m	0	0	1	1	0	0	0	0
50-100m	0	1	0	1	0	0	0	0
Over 100m	1	2	1	0	1	0	0	0
	1	3	2	2	1	0	0	0

1-2kl								
	CC	RC	SS	C	B	LB	MM	Pe
Under 50m	0	2	1	0	1	0	0	1
50-100m	2	1	4	1	0	3	0	4
Over 100m	0	0	0	1	0	0	1	1
	2	3	5	2	1	3	1	6

2-4kl								
	CC	RC	SS	C	B	LB	MM	Pe
Under 50m	0	0	0	1	1	0	0	0
50-100m	4	1	2	3	4	3	2	0
Over 100m	1	0	1	1	1	1	0	1
	5	1	3	5	6	4	3	1

Total  
petros  
each  
level

4-20kl								
	CC	RC	SS	C	B	LB	MM	Pe
Under 50m	1	0	0	0	0	2	1	1
50-100m	0	0	0	0	0	1	5	0
Over 100m	0	0	0	0	0	1	1	0
	1	0	0	0	0	4	7	1

CC - Chambered Cairns.  
RC - Round Cairns.  
SS - Standing Stones.  
C - Cists.  
B - Bronze Age.  
LB - Late Bronze.  
MM - Mining. Lead, Copper.  
Pe - Petroglyphs.

Kirkudbright: 83: 1:50000.

Less than 1kl.

	C	EB	MB	LB	SS	MM	Pe
Under 50m	3	0	0	0	9	0	26
50-100m	1	0	6	0	8	0	19
100-150m	11	0	1	0	1	0	16
Over 150m	4	0	0	0	0	0	3
	19	0	7	0	18	0	64

1-2kl

	C	EB	MB	LB	SS	MM	Pe
Under 50	4	0	11	0	2	0	1
50-100m	3	1	0	2	8	0	7
100-150m	4	0	0	0	4	0	2
Over 150m	3	0	0	0	1	1	4
	14	1	11	2	15	1	14

2-4kl							
	C	EB	MB	LB	SS	MM	Pe
Under 50m	6	3	6	4	3	0	2
50-100m	9	3	4	2	3	2	3
100-150m	4	0	2	0	7	1	0
Over 150m	0	0	0	0	5	4	0
	19	6	12	6	18	7	5

4-20kl							
	C	EB	MB	LB	SS	MM	Pe
Under 50m	15	19	12	18	14	24	0
50-100m	13	10	17	10	8	15	0
100-150m	3	12	18	12	9	18	0
Over 150m	0	7	7	7	2	3	0
	31	48	54	47	33	60	0

Over 20kl								Total petros each level
	C	EB	MB	LB	SS	MM	Pe	
Under 50m	1	7	0	7	0	5	0	29
50-100m	0	13	0	13	0	9	0	27
100-150m	0	9	0	9	0	2	1	21
Over 150m	0	0	0	0	0	0	0	7
	1	29	0	29	0	16	1	84

Total Artifacts and Finds at Various Levels.

	C	EB	MB	LB	SS	MM	Pe
Under 50m	10	2	2	4	5	3	29
50-100m	5	0	5	1	3	2	27
100-150m	4	0	1	0	1	5	21
Over 150m	10	0	1	0	0	5	7
	29	2	9	5	9	15	84

C - Cairns.                      SS - Standing Stones  
 EB - Early Bronze.            MM - Mining, lead, copper  
 MB - Middle Bronze.        Pe - Petroglyphs.  
 LB - Late Bronze.

Kirkudbright: NX 64: 1: 25000

	Under ½kl.			
	RC	SS	B	Pe
0-50ft.	0	0	0	0
50-100ft	0	0	0	5
100-200ft	0	3	0	9
200-300ft	0	0	0	1
Over 300ft	0	1	0	4
	0	4	0	19

	½-1kl			
	RC	SS	B	Pe
0-50ft	0	0	0	0
50-100ft	0	1	0	1
100-200ft	0	3	0	0
200-300ft	0	1	0	0
Over 300ft	0	0	0	0
	0	5	0	1

1-2kl					Total petros each level
	RC	SS	B	Pe	
0-50ft	0	0	0	0	
50-100ft	0	0	5	0	
100-200ft	3	0	1	0	
200-300ft	0	0	0	0	
Over 300ft	0	3	0	0	
	3	3	6	0	

Over 2kl					Total petros each level
	RC	SS	B	Pe	
0-50ft	1	1	1	1	1
50-100ft	6	5	1	0	6
100-200ft	6	3	8	0	9
200-300ft	1	0	1	0	1
Over 300ft	4	0	4	0	4
	18	9	15	1	21

RC - Round Cairns.      B - Bronze Age  
SS - Standing Stones.    Pe - Petroglyphs.